Issue 97
PS
1961 Series
THE PREVENTIVE MAINTENANCE MONTHLY
USE TH' RIGHT TOOLS.
DID YOU USE DD 110 BEFORE YOU STARTED THIS TRIP?
1961
ONLY AUTHORIZED REPAIRMEN DO THIS.
UNUSUAL CONDITIONS? SEE WHAT YOUR TM SAYS.
USE THE RIGHT LUBES.
MAKE ONLY AUTHORIZED REPAIRS.
Will Eisner

THERE'LL BE A SHORT DELAY...
While everybody concerned with Army Equipment takes a precious moment to resolve that this year all needed Organizational Maintenance is done right and on time.
Issue 97
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1960
KEEP MWO'S CURRENT ON YOUR EQUIPMENTS RECORD JACKET - DA FORM 478.
RECORD ALL ROUNDS FIRED IN YOUR WEAPON RECORD BOOK.
NEED THE TM? ORDER ONE ON DA FORM 17.
DON'T HOLLER, USE A UER (DA FORM 468)
DON'T GUESS! USE Y'R PARTS MANUAL.
NEED PARTS? ORDER ON DA FORM 1546.
USE TH' RIGHT TOOLS.
DID YOU USE DD 110 BEFORE YOU STARTED THIS TRIP?
1961
CHECK IT OUT WITH YOUR TEST EQUIPMENT.
ONLY AUTHORIZED REPAIRMEN DO THIS.
NEVER HOARD PARTS.
UNUSUAL CONDITIONS? SEE WHAT YOUR TM SAYS.
LUBE BY YOUR L.O.
USE THE RIGHT LUBES.
MAKE ONLY AUTHORIZED REPAIRS.
Will Eisner

YOU GO... WITH WHAT

In some outfits you sometimes hear:

"Ah-h-h-h-h! When they press the button to go, we'll get all new stuff at the port! !"

And—

"We'll never take this old stuff with us . . . we'll get all new equipment. So, why keep it maintained?"

How wrong can they be?

Wars have a curious way of making soldiers fight with what they've got. It'll be the same today, next year or 100 years from now: **You go with what you've got.**

New equipment on the drawing boards—or even on the assembly lines—won't help you one bit when the light flashes red and the show goes on.

That's why Old Half-Mast, Connie Rodd and a lot of people around the Army are so hot on keeping what you've got in the best condition.

It takes your steady hand and eagle eye and the gray matter up there on your second deck to do the job right:

You learn how to operate your equipment right, first of all. Goofed-up operation can do more damage in seconds

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You learn how to operate your equipment right, first of all. Goofed-up operation can do more damage in seconds on some equipment than a platoon of repairmen can fix in days.

You learn how to keep your piece of equipment adjusted, lubed and clean. The technical manual for your equipment is your guide. Get real friendly with it. And, if you don't have a TM, get your sergeant to get you one.

Learn now . . . keep your Preventive Maintenance know-how up to snuff. And your Preventive Maintenance on-the-ball.

It's your best insurance for when you go with what you've got.

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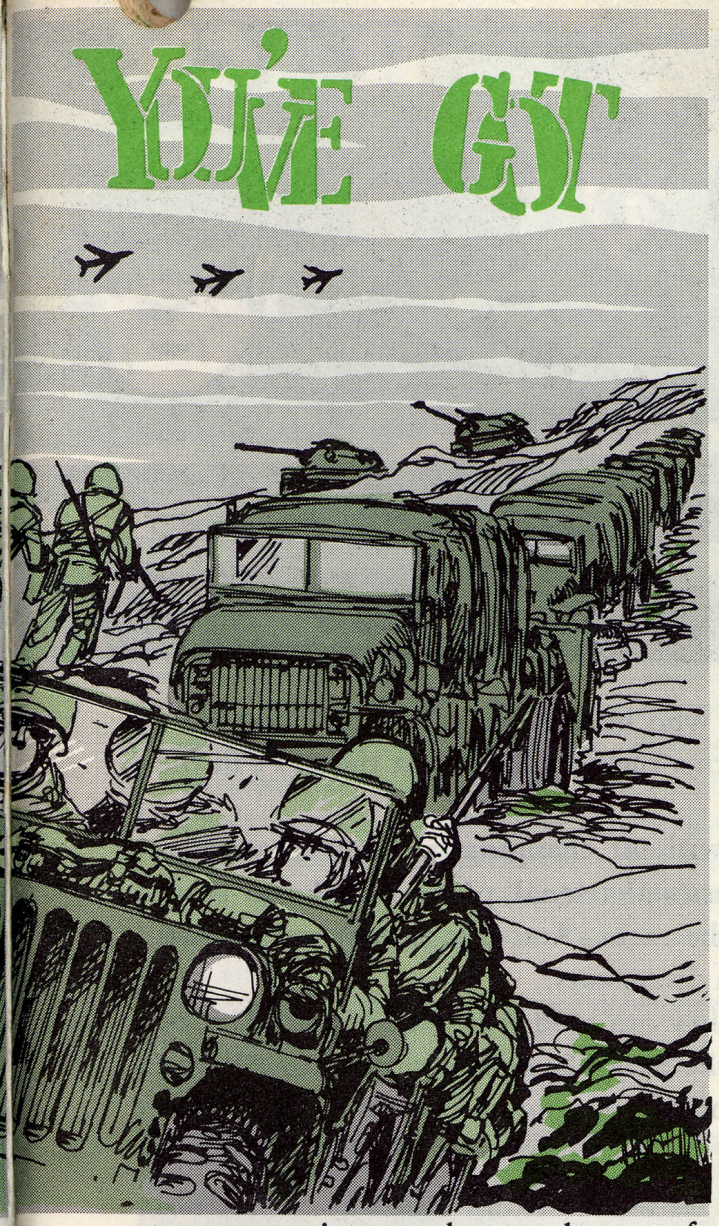
YOU'VE GOT

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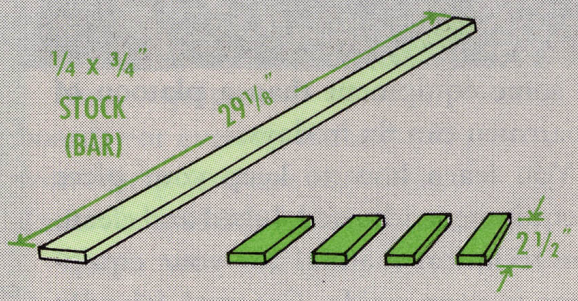
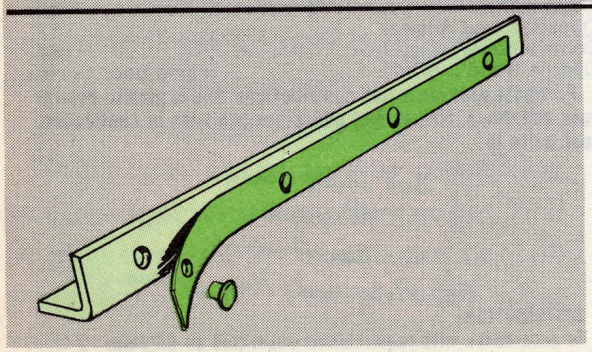
Sure . . . the racks'll hold either rifle without changing a thing. Trouble is . . . a guy with a hankering for his own personal arsenal, plus a little know-how, can make off with any M14's that're in the racks. And things get a mite hairy around the company area when a weapon disappears.

The deal is to have the racks fixed so's they can hold either the M1 or M14, or a mixed batch. And it can be done—with the help of your support unit. All you have to do is pass along the scoop that you're going to read next.

First, though, you want some ¼x¾-in bar stock. You'll need enough to give you a piece 29⅛ inches long, plus four pieces that're at least 2½ inches long for each locking bar.

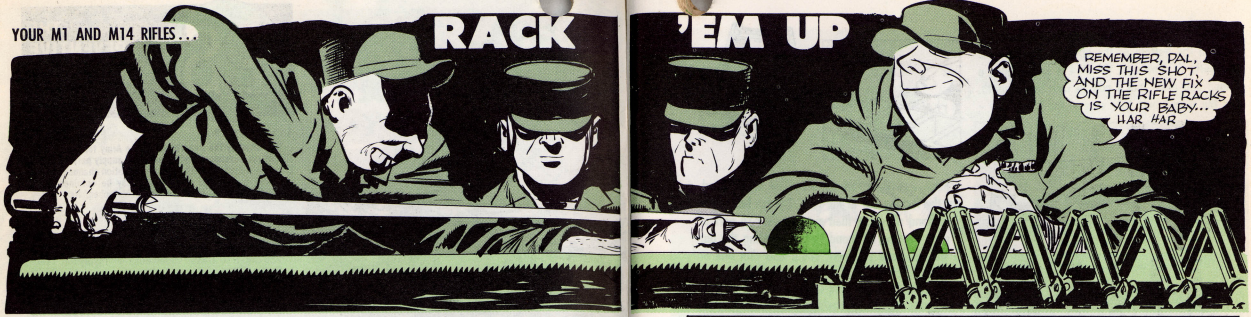




Once you're ready to re-do the locking bars, take them off the arms rack and then remove the four rivets and leather pad from each bar. That's to stop scorching from torching as you'll see later on.

YOUR M1 AND M14 RIFLES...

RACK 'EM UP



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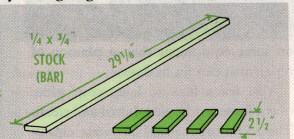
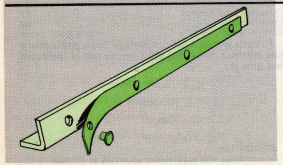
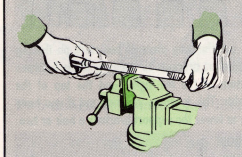




Once you're ready to re-do the locking bars, take them off the arms rack and then remove the four rivets and leather pad from each bar. That's to stop scorching from torching as you'll see later on.

Now you take the four short pieces of bar stock and get ready for some experimenting. While you can probably get away with having each piece 2½ inches long, it wouldn't hurt to make 'em 2⅝ inches long. The arms racks don't get made to close tolerances, so by making the four pieces 2⅝ inches long, you have something to play with. You can always saw off any extra.

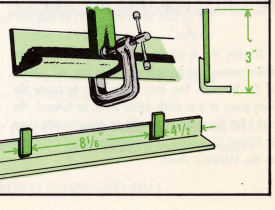


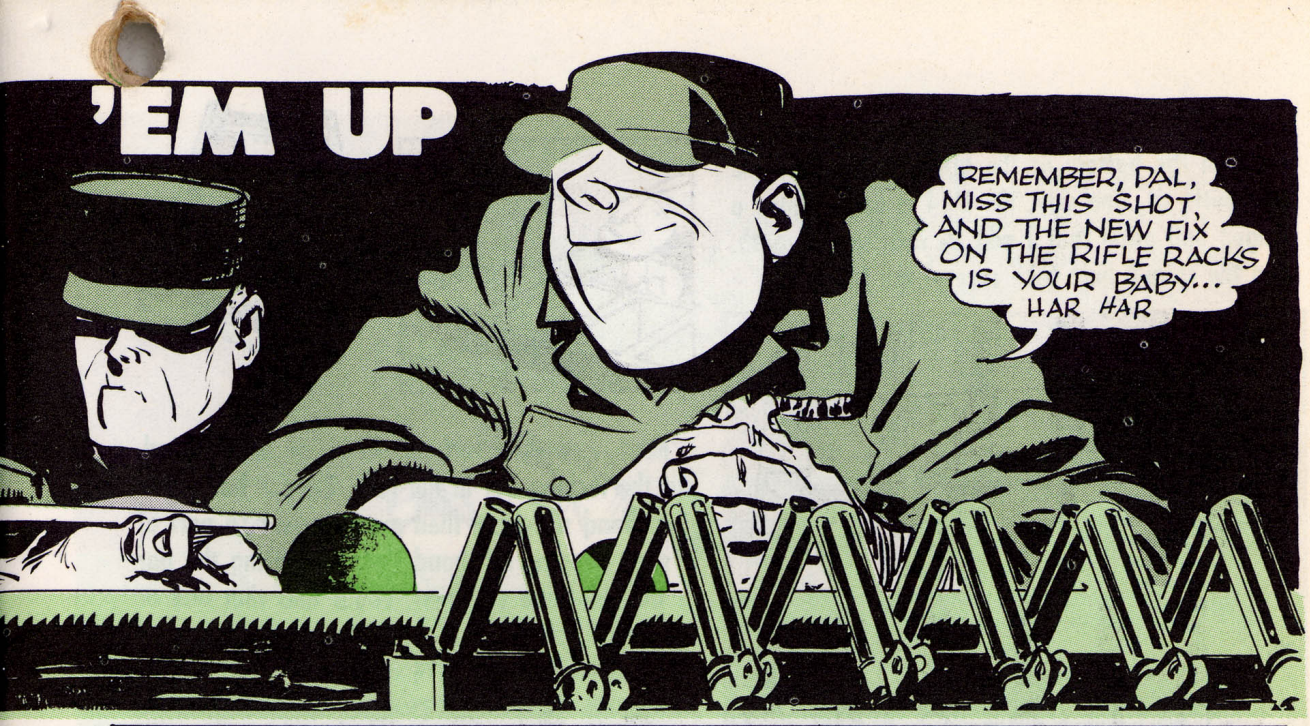
OK . . . file all around each piece to get rid of any rough edges. And since you're ready to use the 29-in piece, now'd be a good time to touch that up with a file.

Then comes the time to start assemblying the modified locking bar so's you can set up things for welding.

Get yourself some C-clamps and clamp the short pieces to the locking bar.

Here are the approximate dimensions you want before you tighten down the clamps.





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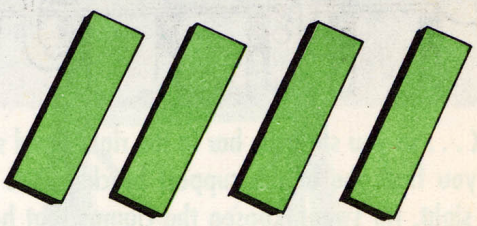

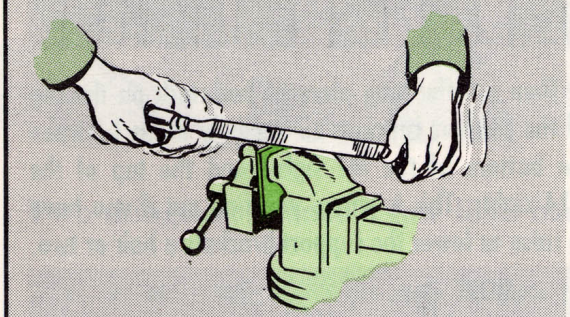

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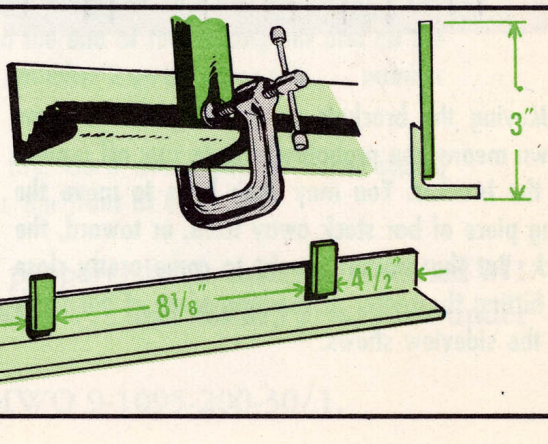
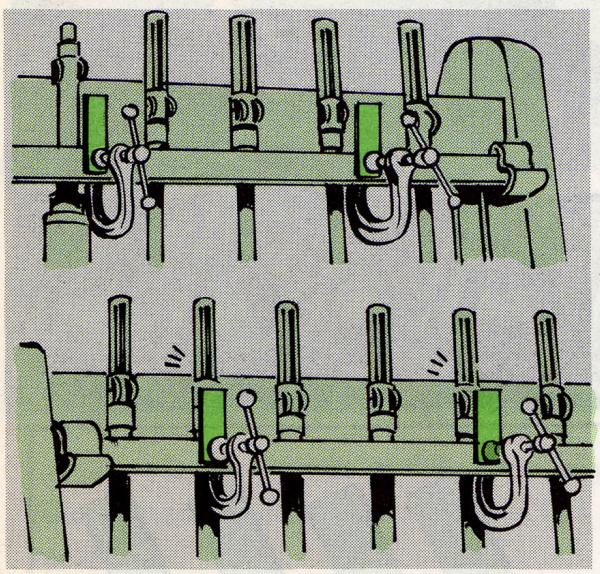
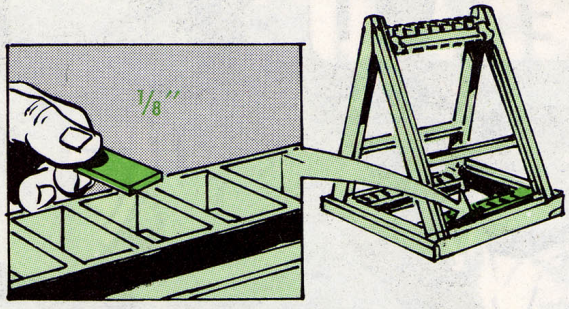


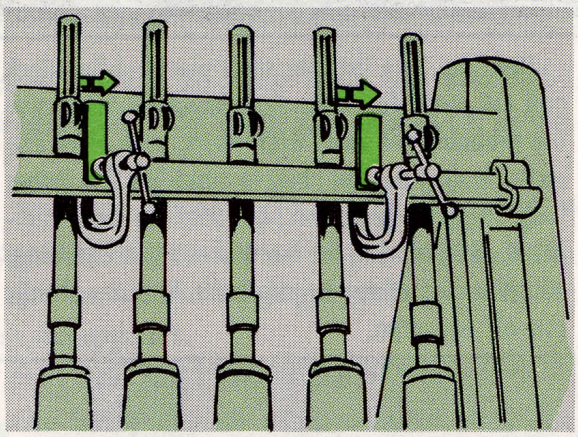
Now slip some ⅛-in thick pieces of metal or wood in the bottom of the arms rack—where the rifle butts sit. One day, the M14 is gonna have a hinged butt plate that'll add ⅛ inch to its length. And the shim'll help take care of the future.

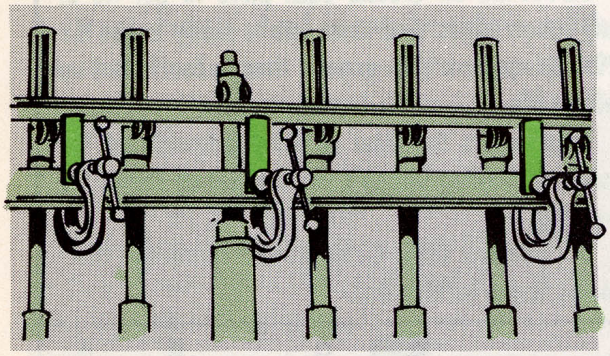




Next . . . with a rack of M14's or M1's mixed, put the locking bar in the rack. Put the bar in the right-hand slot first, then move it over so part of it slips into the left-hand slot. By putting the bar in the left-hand slot first, you'll find that one or more of the short pieces—they can be called support brackets—will hit the M14 sight.

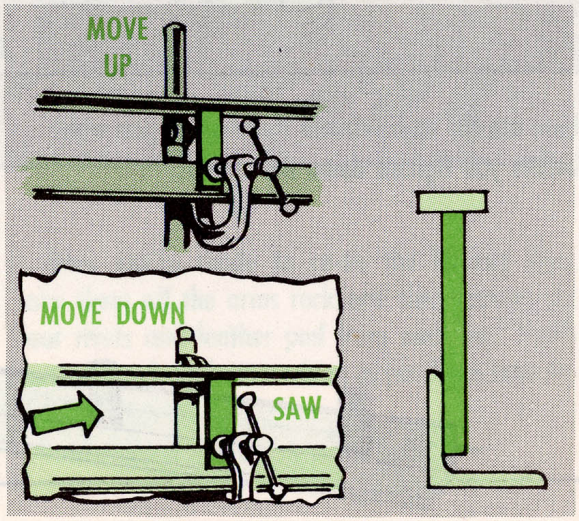
OK . . . so you stick the bar in the right-hand slot and you find one of the support brackets hits an M14 sight. No sweat. Loosen the clamps that hold the brackets and move them a little bit—to the right or left—whatever you need.

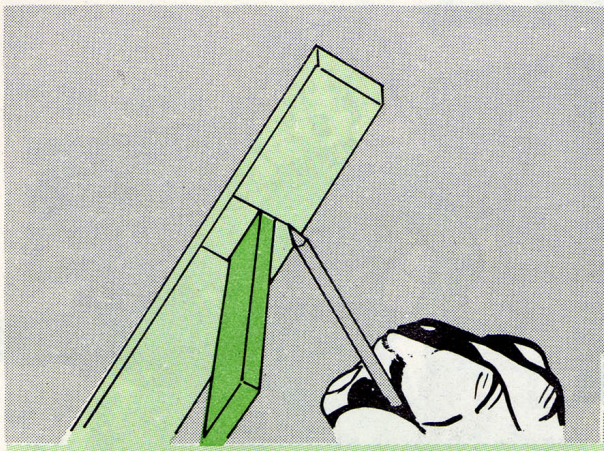




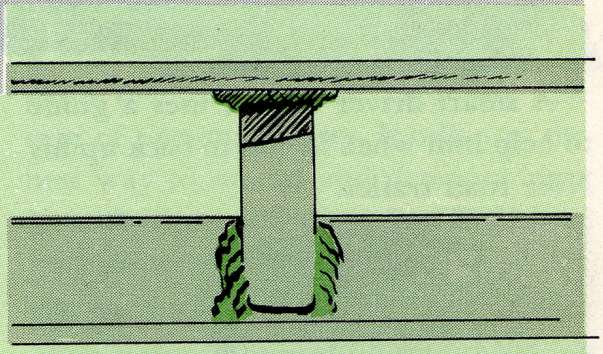
Then put the long piece of bar stock on the top of the support brackets to see how it fits between the bottom of the M1 sights and the top of the M14 sights. This is where you find out if you have to raise or lower the support brackets a hair or two.

Moving the brackets up is no sweat. To come down means you probably have to saw off a piece of the bracket. You may even have to move the long piece of bar stock away from, or toward, the rack. But the brackets ought to come pretty close to hitting the center of the long piece of bar stock as the sideview shows.





When you have everything lined up, you're ready to weld. It'll take a couple minutes extra for each locking bar, but it's worth running a scribe mark wherever the support brackets meet the bar stock and the locking bar. That way, if the bracket moves, you won't have to put the bar back in the rack to line up things.



The only thing left to do is fillet weld all the joints . . . and then cement (with rubber cement) and rivet a new leather pad on the locking bar. It's all right to use a strip of rubber the same thickness. But don't use anything like felt. That kind of stuff drinks moisture. And moisture, plus rifle barrels, equals rust.

Two things mentioned a few lines back are worth going over again.

1. The arms racks don't get made to close tolerances. So modify each rack separately. Don't set up an assembly line. In fact, it might be a good idea to mark each locking bar and rack so they stay together. Put a number 1 on the end of the locking bar and on the wooden frame next to it on one side of the rack . . . number 2 on the other side . . . number 3 on the next rack . . . and so on.

2. The locking bar goes into the right-hand slot first. So it would pay to maybe stencil the words "Insert in Right-Hand Slot First" across the front of each bar.

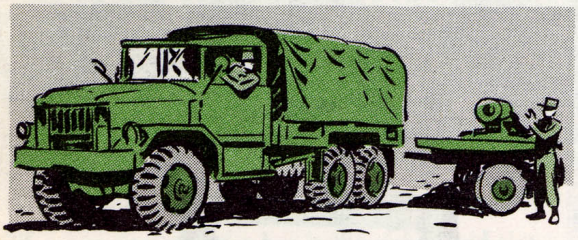
Something else . . . make a note in your property book that the modified M1 arms rack gets listed under FSN 1095-776-0043 . . . and the M3 arms rack under FSN 1095-776-0044.

Your support unit has all this dope in MWO 9-1095-200-30/1.

Connie Rodd's
"SHORT 'N SWEET DEPT"

Take 'er easy

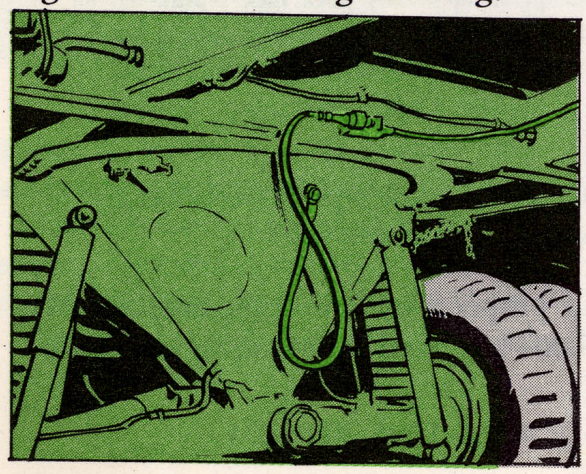
A smart driver always uses a guide to help him when he has to back up his Nike road trailer.



The guide stands where he can see both the driver and the drawbar and signals you to stop before the drawbar hits the bumper of your prime mover.

If you try to go it alone you may jackknife your vehicle, bang the bumperettes and drawbar together, and damage both of them.

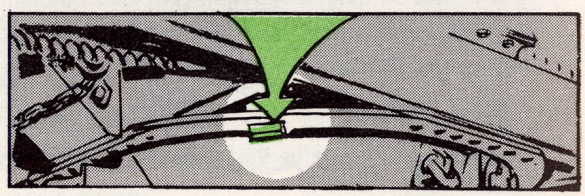
When you're backing up a Nike trailer, your guide keeps you from taking more than a 60-degree swing.



On the air-hydraulic jobs, turning more than 90-degrees in either direction can snap off the brake hose which runs out of the fifth wheel cone. If you swing the drawbar all the way under the bed of the trailer you're almost sure to break it off.

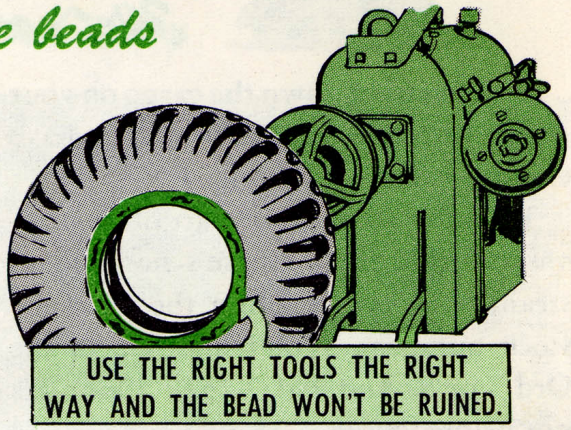
Don't go disconnectin' the brake hose because each time they're pulled apart, some air seeps into the system. Won't be long till you've got a bleedin' job to do. Then again, some other job jockey could forget to reconnect it and take off with no brakes at all.

To protect the hose when making a turn or backing up, all M261A1's after serial number 1115 got a fix. A stop was added to the support rail . . . limiting the turning radius to 83 degrees.



SO, DON'T GO TRYING TO GET THE SAME ANGLE SWING OUTTA THESE AS YOU DID BEFORE, OR YOU'LL KNOCK THE STOPS OFF THEIR PERCH. TAKE 'ER EASY WHEN BACKING UP; ALWAYS USE A GUIDE.

Save the beads



No doubt about it—your vehicle's pneumatic tires can take it. They're solid, firm and rugged. They hafta be strong to put up with those heavy shakes, shocks, bumps, cold, dampness and heat they'll hit while toting military loads.

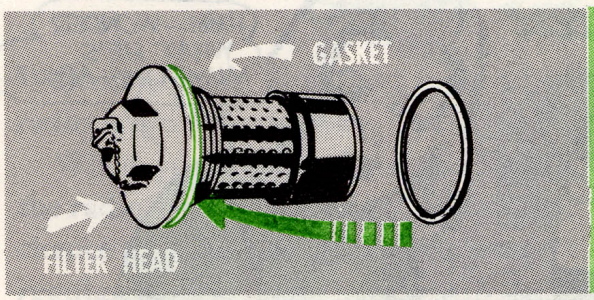
But a whale of a lot of the built-in strength is lost when eager beavers start a mounting or demounting job their own way with the wrong tools.

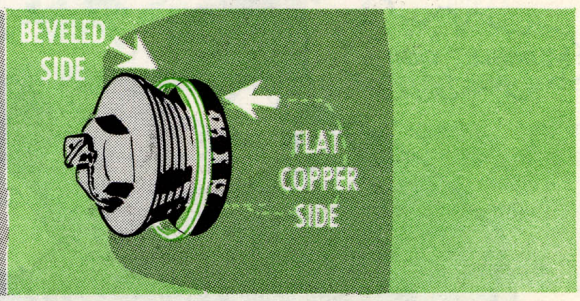
That kind of hacking and jabbing batters the tire's bead—the part nearest the rim. When a bead's damaged, the otherwise good tire is likely to find itself being tossed on the nearest salvage pile. That's where many good treads and carcasses wind up just because their beads are damaged.

There's a way out, tho, TM 9-1870-1 gives the scoop on the right use and care of pneumatic tires. It tells you the best way to mount and demount tires is with tire equipment you'll find at your support unit. By doing your tire changing job with the gear found there, you'll find the work a lot easier and safer . . . and it's lots better for those beads, too.

Remember, tho, you can ruin the tires with the best tire-changing equipment around if you don't use it right.

Crimped gasket





Some guys'er messin' up the gasket, FSN 5330-641-4340 that goes on the oil filter assembly (FSN 2940-607-3531) for the M274 (Army Mule). They're being put on backwards.

After the filter's cleaned like in para 39d, TM 9-8034-20 (July 1957), be careful how you stick the gasket back on or it'll get crimped.

Once this happens the filter'll get the leaks and may cause the ruination of an engine.

They go on with the flat copper side headed to seal against the oil pump housing. The beveled (asbestos) side of the gasket butts up against the beveled underside of the filter head. Put'er on this way . . . you're in business.

Wet cargo blues

Rain wetting down the cargo on your M125 10-tonner because you don't have enough canvas to cover it?

If you're short all or part of the canvas for this truck, there's no need to strain your eyes reading the pubs for stock numbers. Won't find 'em in the Ord 7 or 8. And TM 9-2320-206-20P's not printed yet.

Here're the nomenclatures and numbers you'll need to get 'em:

CURTAIN, VEHICULAR, TRUCK CARGO BODY, FSN 2540-777-5254 (ORD PART NO. 7966198).

COVER, CANVAS, SOFT TOP, ASSY, FSN 2510-737-2723 (ORD PART NO. 7372723).

This is not a regular issue item, but if you need it you'll have to turn in a special justification with your 1546. It's only listed in ORD 9 SNL G792.

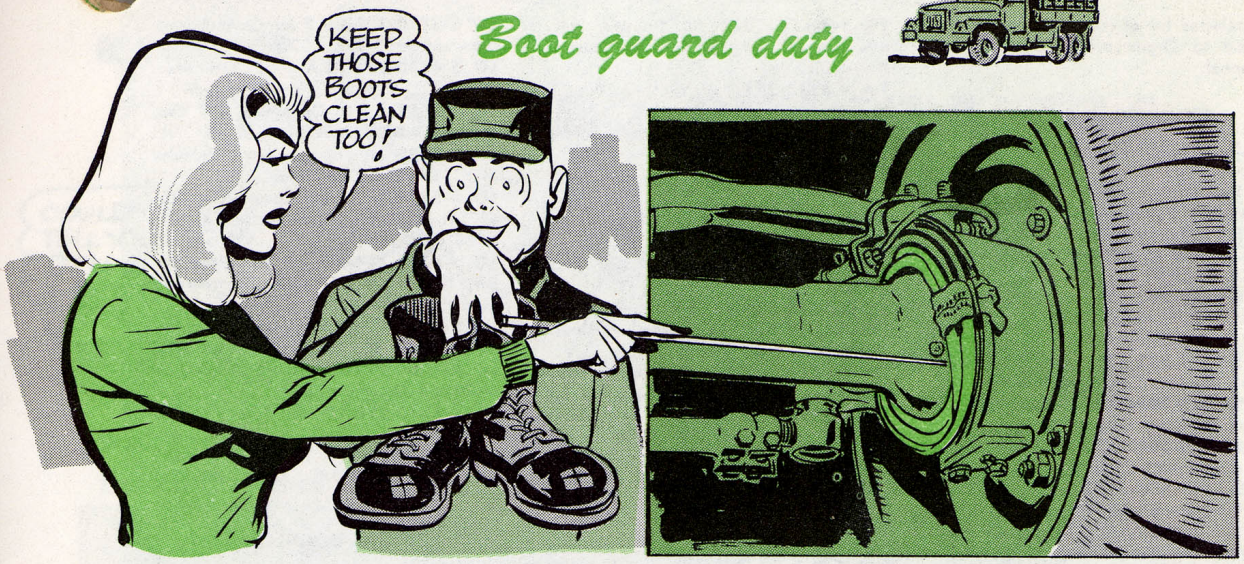
COVER, FITTED, VEHICULAR BODY, FSN 2540-777-5255 (ORD PART NO. 7966197).

These items are at the depot waiting. But until you see 'em listed in official pubs, it may be best to explain your need by listing the why-fors on your requisition.

Feel test

If your wheeled vehicle's hard to steer or the brakes grab just as you come to a halt, a feel for hot or cool hubs may clue you to the cause of the trouble. A hot hub may mean a defective, dry or badly adjusted wheel bearing or a dragging brake. But if a hub's too cool after a trip, it could mean your brake's not working.

Boot guard duty



Those real important steering knuckle boots on your 2½-ton (G742-series) trucks ask for no special favors.

They're tough and they can take a lot of road guff as they guard the highly polished surface of the steering knuckles and the front axle housing.

But, like with everything else, there's a limit to the abuse they can stand and still do a good job.

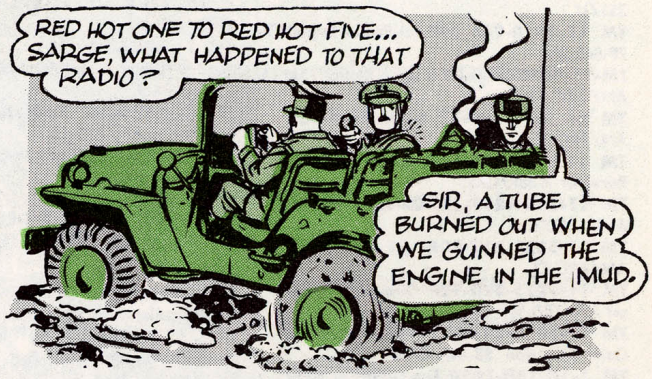
All you're expected to do is keep a watchful eye on 'em for cleanliness . . . especially when you're out in the field. Relieve those rubber boots of any caked mud, road grime or grease. Keeping 'em clean will help 'em do a better job —they'll last longer, too.

And if you find the boot material separating from the zipper or any large cracks, it's time to replace the boot.

Smooth and easy does it

Gently, gents. Stomping fast and heavy on your vehicle's gas pedal when its radio is working is risky.

When you "gun" the engine while the radio's operating, there's always the chance that the voltage regulator won't regulate quick enough and will let a little surge slip through . . . especially if there's a high resistance in the system, a low or defective battery or your regulator's on the blink.



And a little surge can do different kinds of damage on different kinds of sets—but with the same result: No communications.

It goes without saying that you always turn off your radio before starting your engine. This way you keep any voltage surge from burning up the radio tubes.

A selected list of recent publications of interest to Organizational Maintenance Personnel.

TECHNICAL MANUALS

TM 5-6115-239-20 Aug Generator 45 KW Mod 4070.
TM 5-6115-243-20 Jul Generator Set, Diesel, 30 KW Jeta Model MD-301815-W.
TM 5-6115-249-15 Jul Generator, Gasoline 1.5, KW AC, 120V, Winpower Model G-1536ASE-2A016-1.
TM 5-6115-280-12P Jul Generator, Gasoline 5KW Hobart Mod. JB5AC, AC, 120V.
TM 5-6115-283-12P Jul Generator, Diesel, 300 KW, Cat. Mod. D-397.
TM 9-1055-208-25P May 762-MM Rocket Handling Unit M405.
TM 9-1400-500-12/2 Jul Test Shop and Missile XM2 (Hawk).
TM 9-1400-500-12/2 Sep Hawk.
TM 9-1430-500-12/1 Sep Hawk.
TM 9-1430-500-12/2 Aug Check Procedures Radar Set AN/MPQ-33 and AN/MPQ-34 (Hawk).
TM 9-1440-350-24P Jul Launcher, XM74 and Erector Servicer XM478.
TM 9-1450-500-20 May Loader (Hawk).
TM 9-2300-224-20P Aug Carrier, Personnel, Armored M113.
TM 9-2320-218-20 Jul Truck, ¼-Ton M151.
TM 9-2350-215-10 Jun Tank Combat, 105mm gun, M60.
TM 9-9516-12 Jun Prelaunch Sig Sim SM-200/T (Corporal II).
TM 10-3930-219-10 Aug Truck, Lift, Fork, Towmotor Mod 461.
TM 11-1510-205-10P Jul Installation Items for Electronic Equipment in U-1A Aircraft.
TM 11-1510-205-20P Jun Installation Items for Elect Equip in U-1A.
TM 11-5815-204-20P Jul Radio Teletypewriter Set AN/GRC-46, AN/GRC-46A & AN/VRC-29.
TM 11-5820-222-10 Jun Radio Sets AN/VRC-24 and AN/TRC-68.
TM 11-5820-222-20 Jun Radio Sets AN/VRC-24 and AN/TRC-68.
TM 11-5820-251-10P Jul AB-155/U; AB-144A/U; AB-155B/U MAST Bases.
TM 11-5820-252-20P, C1 Aug PP-351/U.
TM 11-5820-266-20P Jul Power Supply PP-845/U.
TM-11-5820-295-10 Jun Radio Set AN/GRC-19.
TM 11-5820-349-15, C1 Aug Radio Set AN/TRC-27.
TM 11-5820-360-10P, C1 Aug Radio Receiver R-389/URR.
TM 11-5821-217-12, C2 Jul Radio Set AN/ARC-73.
TM 11-5821-217-20P Jul Radio Set AN/ARC-73.
TM 11-5825-220-12P Direction Finder set AN/TRD-17.
TM 11-5830-226-12P Panel, Patching Communication SB-447/GSQ.
TM 1-1H-13H-1020 Aug Lights for Litter Kits.
TM 1-1H-21-4-20P Jul.
TM 1-1H-23A-4-20P Jul.
TM 1-1H-34-2 Apr.
TM 1-1H-34-4-20P Jul.
TM 1-1HA1-2-2-13 Jun.
TM 1-1HA1-3-2-14 Aug.
TM 1-1HA2-2-2-24 Jul.
TM 1-1L-20A-6 Aug.
TM 1-1U-1A-1034 Jul Stainless Steel Aux Fire-wall and Flex Hose for Constant Speed Oil Line.
TM 3-4240-221-25P Jul Mask, Pro CV M14 & M14A1.
TM 5-1450-200-20 Jul Elevator, Guided Missile, Wayne Pump Co.
TM 5-1450-200-20P Jul Elevator, Guided Missile, Wayne Pump Co.
TM 5-2420-209-20P Jun Tractor 14,025 to 20,000 DBP.
TM 5-3805-207-20P Jun Clark Mod 85A-M.
TM 5-3810-201-10 Jul Crane Shovel Crawler, 40 Ton, Harnischferger Model 855-BG-2.
TM 5-3810-201-20 Jul Shovel Basic Unit, Craw Mounted, 40 Ton; 2 Cu Yd.
TM 5-3820-200-20P Jun Auger, Earth Skid Mounted Driven 9 Ft Boring Depth.
TM 5-4120-200-12 Jul Air Conditioner: Floor MTG; 36,000 BTU, Keco Mod F-6B-CE.
TM 5-4120-200-20P Jul Air Conditioner: Floor MTG; 36,000 BTU Keco Mod F-6B-CE.
TM 5-4310-219-20P Jun Ingersoll-Rand Mod Dr 600.
TM 5-4310-222-20P Jul Compressor, Rotary Joy Mod RP125 GC 40 MS-3.
TM 5-4930-203-20P Jun Lub and Ser Unit; Skid Mounted; 15 CFM Compressor, Gas-Driven.
TM 5-6115-226-20P Jul Generator Set Windpower Mod G-1528-2A016-1.
TM 5-6115-231-25P Jul Generator Set, 0.5 KW Winpower Mod G-0536-1A08-1.
TM 5-6115-238-10 Jul Generator Set, 60 KW, AC 120/208, 240/416 V, and 120 V, 3 Phase 60 Cycle Convertible To 50 KW.
TM 5-6115-239-10 Jul Generator Set, Diesel Engine Consolidated Diesel Electric Mod 4070.
TM 11-5840-208-10 Jun Radar Set AN/MPQ-4A.
TM 11-5840-220-20 Jun Radar Set AN/MPQ-29.
TM 11-5840-231-12P, Azimuth-Range Indicators IP-141/TPS-1D and IP-141A/TPS-1D.
TM 11-5840-243-20P Jun Antenna Group 0-1124/FPS.
TM 11-5895-232-20P Jun Indicators ID-226/APR-9, ID-226A/APR-9 & ID-226B/APR-9.
TM 11-5895-239-20P Jul Radio Frequency Tuners TN-131/APR-9 and TN-131C/APR-9.
TM 11-5895-267-20P Jun Receiving Set, Radar AN/APR-13.
TM 11-6140-200-15P, C1 Aug BB-401/U Battery.

LUBRICATION ORDERS

LO 5-1172-1 Jul 60 Crane-Shovel, Koehring Mod 304.
LO 5-1178-1 Jul Crane, Shovel, Crawler Thew-Lorain Mod 82.
LO 5-1178-2-3 Jul Crane-Shovel, Crawler Diesel 30-40 Ton, 1¾ Cu Yd Thew-Lorain Mod 82.
LO 5-1178-4 Crane-Shovel, Power Unit Crawler, Thew-Lorain Mod 82.
LO 5-1778-5 Jul 60 Crane-Shovel, Crawler Thew-Lorain Mod 82.
LO 5-2410-204-20-1, -20-2, -20-3 Jul 60 Tractor, Full Tracked, D8.
LO 5-3810-201-20-2 Jun 60 Crane-Shovel, 40 Ton, 2 Cu Yd Harnischfeger Model 855 BG-2.
LO 5-3810-203-20-2 Jun Crane-Shovel, Garwood Mod 20A(f), 20B.
LO 5-4120-204-12 Aug Air Conditioner: 60,000 BTU, Ellis and Watts Mod A-60.
LO 5-5057 Jul 60 Generator, 100 KW, Buda Mod DC 100A3CE.
LO 5-5220 Jun Engine, Diesel, Hercules Mod DRXB and DRXC.
LO 5-5409-1 Jul 60 Compressor, Air, 92CFM, 3500 PSI, Clark Models XM301, XM301E1 Corporal.
LO 5-6115-244-20 Jul 60 Generator Set, 10 KW, AC, 120V, Pacific Mercury Mod PM 59-010-1.
LO 5-9635-2 Jul Crane-Shovel, Crawler, 40 Ton 2 Cu Yd, (Bucyrus-Erie Mod 51B).
LO 9-1005-224-10 Jun Machine Gun, M60, and Mount, M122.
LO 9-2320-218-10 Jul Truck, Utility: ¼-ton M151.
LO 9-2330-210-10 Jul 60 Semitrailer: 6-Ton M117, M117A1, M118, M118A1, M119, M119A1.

TECHNICAL BULLETINS

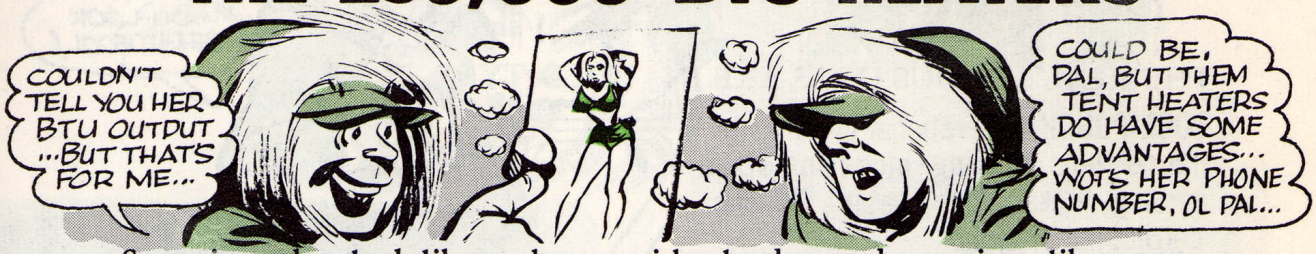
TB 9-1410-250-12/1/4 Aug Removal of Dropway Assembly and Squibs (Nike-Herc).
TB 9-1410-250-12/1/5 Aug Warhead Container M409: (Nike-Herc).
TB 9-2300-229-10/1 Jul Truck, M49C, M217C GMC Model HC 453 Aviation Fuel Ser and Fil Sep Kit.
TB 9-2330-211-14/1 Aug Semitrailer, Low Bed: 15-Ton, M172; Ins of leg.

MISCELLANEOUS

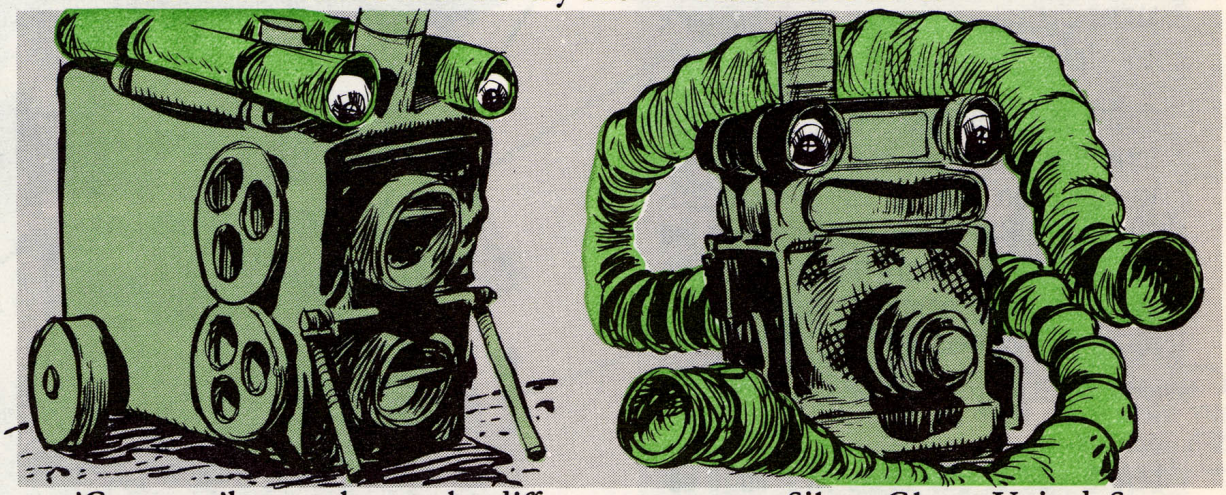
ORD 7 SNL Y4 Sec 9 May Ant-Rec-Trans OA-655/MPA-4, OA-655B/MPA-4, OA-655D/MPA-4.
MWO 10-501-10 Aug Parachute, Personnel, 24 Ft. DIA: Relocation Of The Safety Wire Hole.
MWO 55-1520-207-20/8 Aug Ins of Tail Rotor Hob Assembly HU-1.
MWO ORD J753-1-W11 Aug Hoisting-Beam M7E1: To Accommodate Two Lift Brackets (Nike-Herc).
SM 9-4-5180-A11 Jul Shipping Container: For Aft Section of Missile Body M351 Corp.
SIG 7 & 8 AN/VRC-7, C1 Aug Radio Set AN/VRC-7.
SIG 7 & 8 AN/TRC-20, C5 Aug Radio Set AN/TRC-20.
SB 3-30-24 Aug 60 Breathing Apparatus, M15.
FM 6-58 Aug Honest John with Launcher XM33.
DA Form 2320 May Eng Mech Equip Monthly Oper Record.
DA Form 9-28 Jul Weekly Check Sheet Acq Radar, Herc.
DA Form 9-29 Nike-Herc Monthly Check Sheet Acq Radar Sys.
DA Form 9-31 Jul Nike-Herc Daily Check Sheet Computer & Recorder Group.
DA Form 9-33 Jul Nike-Herc Monthly Check Sheet Computer & Recorder.
DA Form 9-34 Jul Daily Check Sheet Missile and Target Track Radar Herc.
DA Form 9-35 Jul Nike-Herc Weekly Check Sheet Track Radar.
DA Form 9-36 Jun Nike-Herc Monthly Check Sheet Track Radar.
DA Form 9-95 Jul Daily Check List Missile and Target Track Radar Herc.
DA Form 9-96 Jul Weekly Check Sheet Missile and Target Track Radar Herc.
DA Form 9-97 Jul Monthly Check Sheet Missile and Target Radar Herc.

BE YOUR OWN INSPECTOR . . .

THE 250,000-BTU HEATERS



Sometimes they look like pushcarts with a load on and sometimes like octopuses with the gout. But make no mistake about it, these 250,000-BTU tent heaters are the kind of foul-weather friend every outfit would like to have.



'Course, y'know, they go by different names . . . Silent Glow, United Stove, Vogt and Herman-Nelson. But all of 'em have one thing in common: They're the "most" when it comes to heating or ventilating a large tent, garage, hangar or the like, or the inside of a truck, tank, plane or train, or even a tunnel.

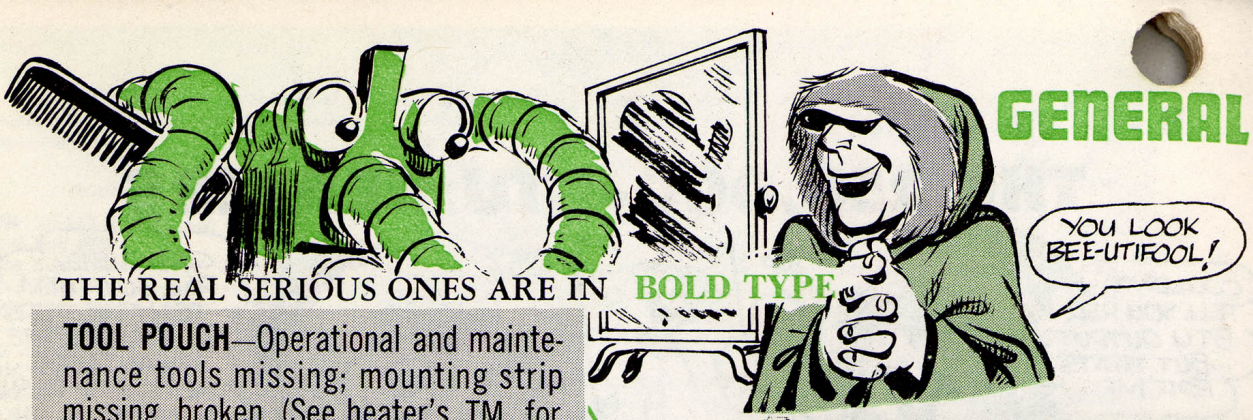
That BTU, in case you wondered, means British Thermal Unit: The amount of heat it takes to make one pound of water one degree hotter.

Keeping these guys happy is no great chore, either. Their needs are simple: The right liquid diet . . . a change of oil when they need one . . . a good wash-up or rubdown . . . just the things called for in the pubs.

One thing you gotta remember, though: These heaters can change from a "friend" to "fiend" quick as a flash if you don't treat 'em right.

A good rule of thumb on these heaters is that every deficiency that involves fuel in the burner—like a leaking line, tank, gasket, etc.—is a serious deficiency. And this type deficiency can be fatal to others besides the heaters.

Tell you what you do: Next time you pull your weekly maintenance give your heater a careful going-over with this inspector guide in hand. It sorta follows the MAC (Maintenance Allocation Chart) in TM 10-4520-201-20P (Aug 58). The serious deficiencies are in **bold type**. Fix 'em yourself if you can, but if you don't have the go-head to fix 'em, call in your support people—fast.



THE REAL SERIOUS ONES ARE IN **BOLD TYPE**

TOOL POUCH—Operational and maintenance tools missing; mounting strip missing, broken. (See heater's TM for correct list of tools.)

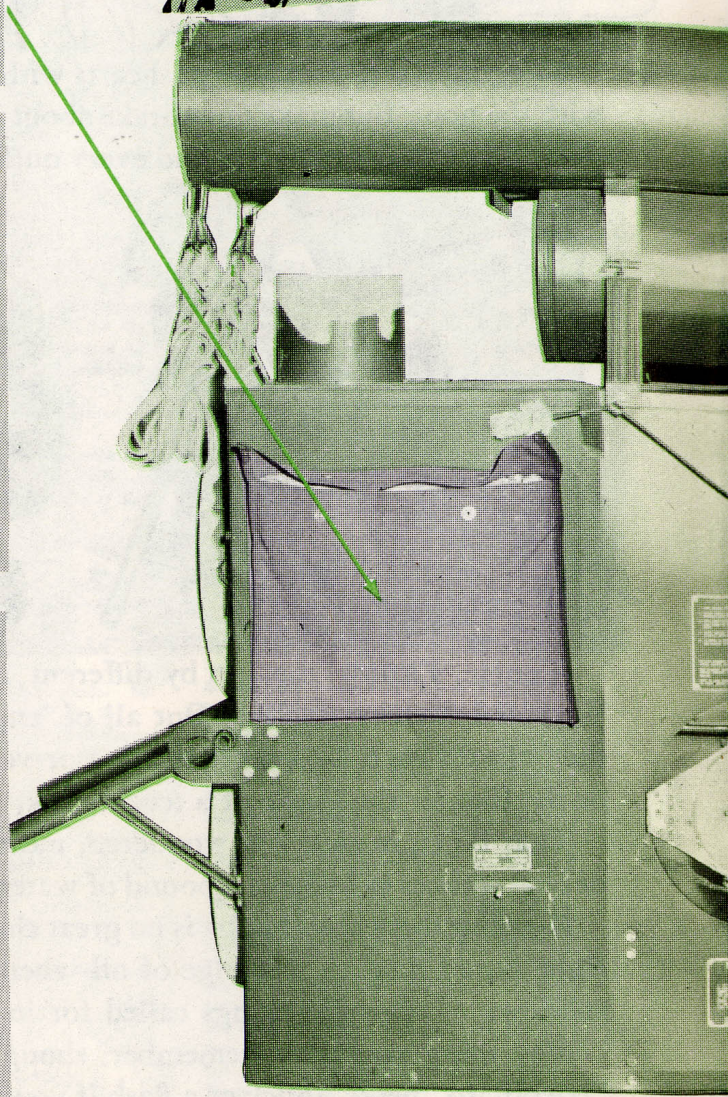
ACCESSORIES, SPARE PARTS, EQUIPMENT—Missing, broken. (See heater's TM for basic issue list items).

PUBS, RECORDS AND FORMS—Missing, torn, illegible, made out wrong, not up to date. Should have TM 10-4520-201-10, -20, -20P and the LO, along with the DA Form 478 (record jacket) and the most recently completed inspection form, DA Form 10-103.

LEAKS—Oil or gas slicks on ground beneath unit.

To check for leaks in the safety trip valve, open the manually-operated burner fuel shutoff and metering valves up near the fuel tank and then close the safety trip valve. If any gas gets through to the burner, you'll know the diaphragm's shot. Notify support; don't try to fix it yourself.

To check for leaks in the combustion chamber, shoot two or three squirts from your hand oiler into the access door. Smoke should come out of the stack. But if smoke comes out of the ducts, too, you'll know the combustion chamber's burnt out or badly rusted. Shut the engine off quick. Then run—don't walk—for help! It means poison gas is going through the ducts!



GENERAL

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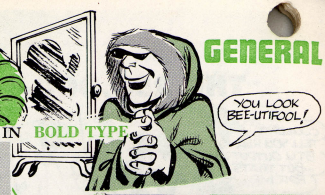

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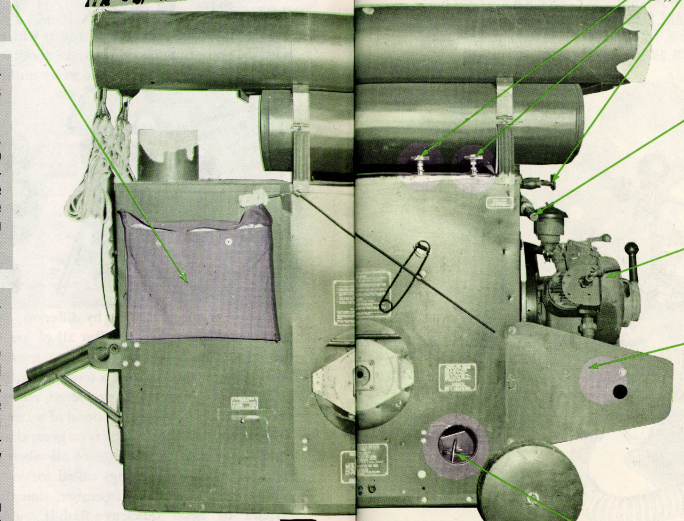


APPEARANCE

VALVES (Heat control, burner fuel cutoff, main fuel shutoff) **—Loose, leaking.** Handles broken, loose, missing, don't work right.

SUMP—Cap missing, broken. **Needs draining.**

Drain the sump every day. Here's how to do it easier: Retract the wheels to make the heater level. Then grab the carrier handles and raise the aft end so it's slightly higher than the engine end. This way the gook won't be able to collect in the far end of the tank.

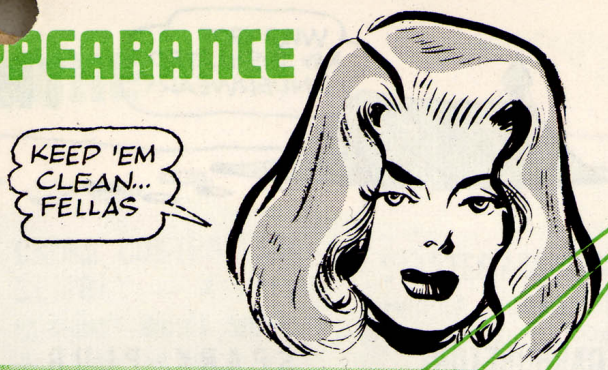
ENGINE ASSEMBLY—Mounting bolts missing, loose, dirty.

OUTSIDE SURFACES — (Cabinet, tank, stack, tubes, etc.)— Dirty, dented, distorted; paint chipped, burned. Body welds broken. Body bolts and nuts missing, loose.

LEVELNESS—Heater tilted more than 5 degrees while in operation.

SAFETY TRIP VALVE—Doesn't close; leaks.

APPEARANCE



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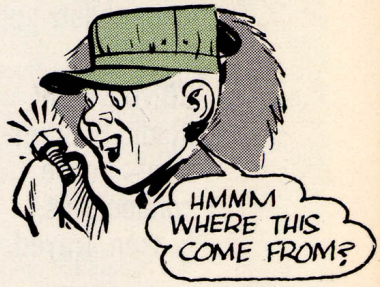

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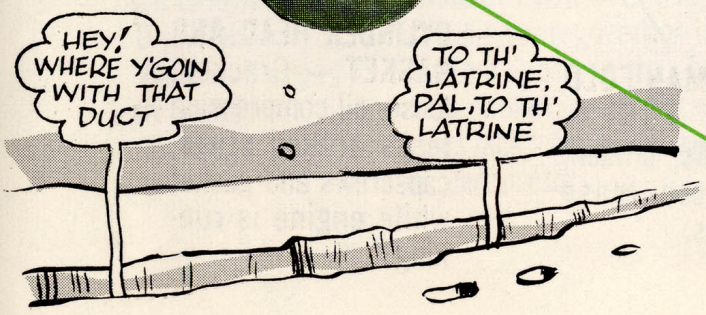


THE

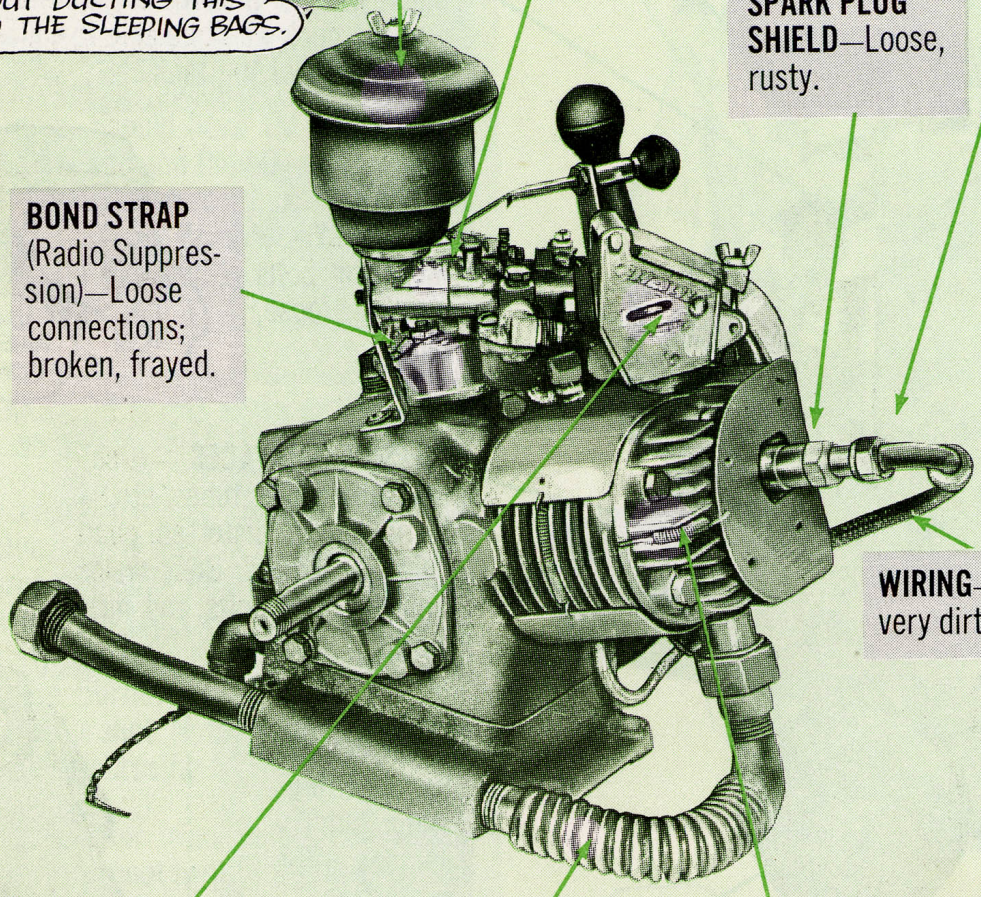
AIR CLEANER — Oil below or above level mark. Oil filter dirty; air cleaner loosely mounted. (Check LO; note correct OE and OES for season.)

CARBURETOR INTAKE ELBOW— Loose, rusted; worn gasket.

SPARK PLUG— Cracked, loose, dirty. Leaks around insulation and gasket.

SPARK PLUG SHIELD—Loose, rusty.

BOND STRAP (Radio Suppression)—Loose connections; broken, frayed.



WIRING—Loose, very dirty.

MANIFOLDS (Intake and Exhaust)— Cracked, loose, gaskets leak; studs, bolts broken, missing.

FLEXIBLE MANIFOLD EXHAUST TUBE — Loose, leaks, broken, badly rusted; loose connections.

CYLINDER HEAD AND GASKET — Cracked, loose; oil compression leaks around studs, capscrews and gasket while engine is running.

THE ENGINE

AIR CLEANER — Oil below or above level mark. Oil filter dirty; air cleaner loosely mounted. (Check LO; note correct OE and OES for season.)

CARBURETOR INTAKE ELBOW— Loose, rusted; worn gasket.

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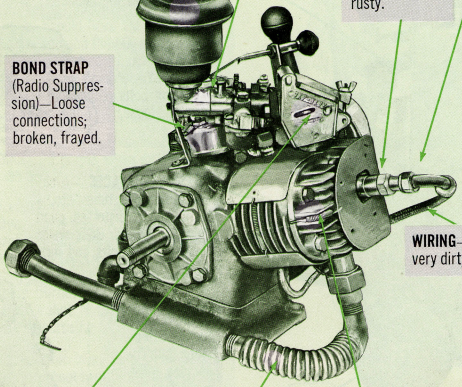
SPARK PLUG SHIELD—Loose, rusty.

BOND STRAP (Radio Suppression)—Loose connections; broken, frayed.



WIRING—Loose, very dirty.

MANIFOLDS (Intake and Exhaust)— Cracked, loose, **gaskets leak;** studs, bolts broken, missing.

FLEXIBLE MANIFOLD EXHAUST TUBE — **Loose, leaks, broken, badly rusted; loose connections.**

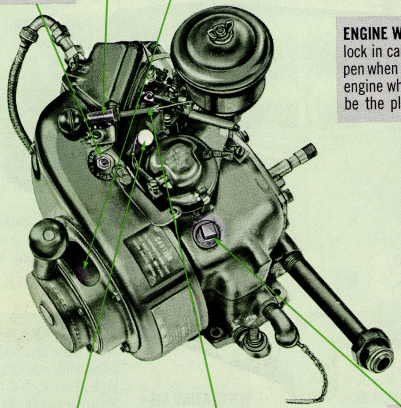
CYLINDER HEAD AND GASKET — Cracked, loose; oil compression leaks around studs, capscrews and gasket while engine is running.

UNUSUAL ENGINE NOISES — If the engine misses or stalls or won't respond quickly to controls, something's rotten in Denmark. And if it rattles or squeaks like it's in pain, could mean it's hurting on the inside. Report anything suspicious to your support guys right off. Here's some symptoms to look for:

CHOKE CONTROL ASSEMBLY — **Handle missing; won't work;** too tight or too loose.

STARTER ASSEMBLY— Handle cracked. Cord frayed, worn. Pulley broken. **No spring action.** Ratchet needs lube.

IGNITION SWITCH —Won't work.



ENGINE WON'T START—Vapor lock in carburetor. Could happen when you try to restart the engine while it's hot. Or could be the plug needs attention.

IDLES TOO FAST OR SLOW— Carburetor needs adjusting.

MISSES OR KNOCKS—Valves sticking.

OVERHEATING— Blocked up baffle, fins or flywheel.

OIL LEVEL GAGE — **Level too low** (no lower than ½-in below full mark on gage.) Needs changing. Check oil every time you fill the gas tank. See LO for right OE or OES.

CRANKCASE BREATHER VALVE—Clogged. (It should vibrate.)

CARBURETOR — Choke, throttle, air vane governor linkage system loose, worn. Throttle and choke valves stick. Linkages lack lube. Water and gook in carburetor.

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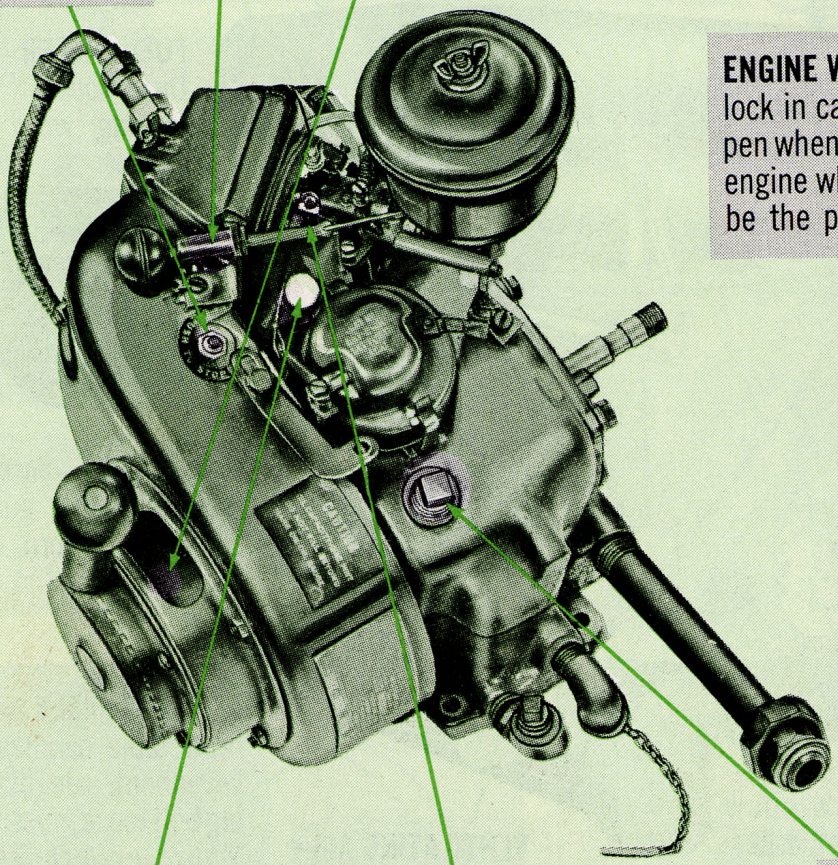

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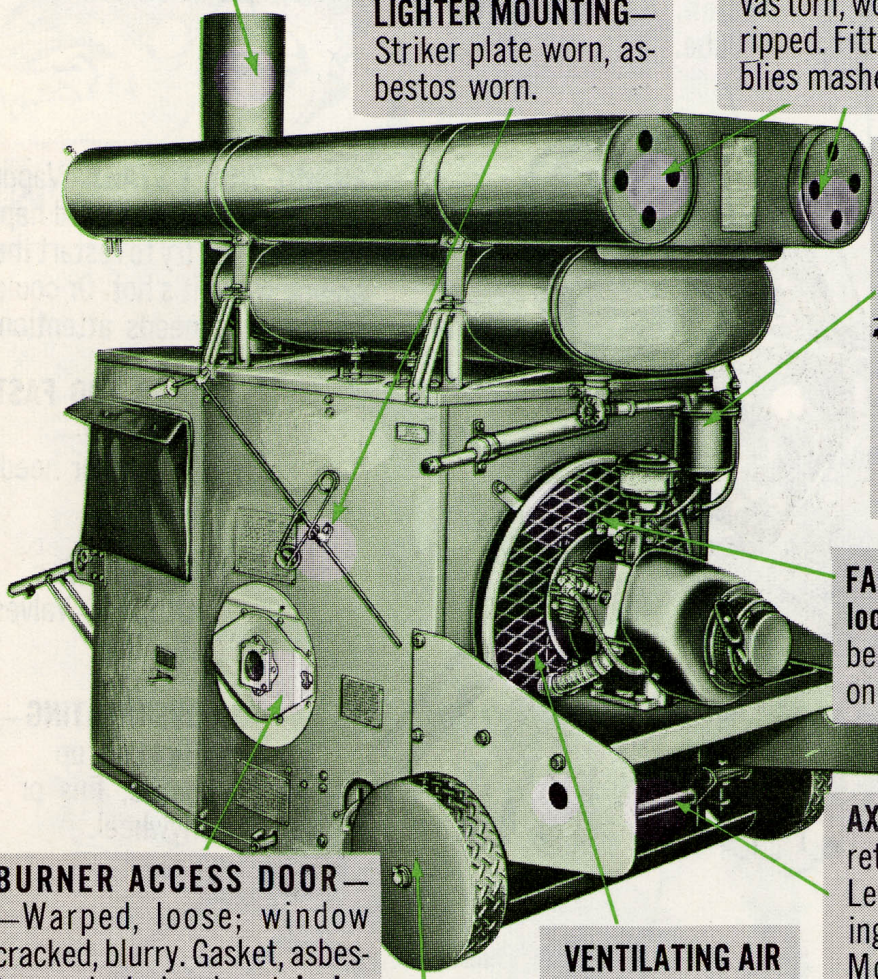
STACK (with spark arrester screen, extension exhaust)—**Blocked, screen missing; heavy carbon deposits in screen and pipe;** bent, pinched, over-extended, dirty. Screen broken, distorted.

CLIP, TORCH ROD LIGHTER MOUNTING—Striker plate worn, asbestos worn.

6 AND 12-IN DUCT ASSEMBLIES—**Ducts crushed, collapsed. Asbestos end of 12-in duct not fastened to unit.** Canvas torn, worn. Asbestos lining ripped. Fittings on 6-in assemblies mashed.



FUEL FILTER—Dirty, loose, **leaking;** worn gasket.

FAN GUARD—**Screws loose, missing;** guard bent; screen torn, not on right.

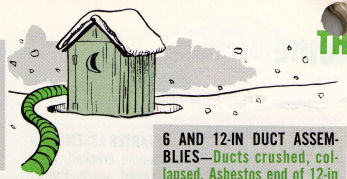
AXLE ASSEMBLY (with retractable handles)—Lever bent; axle retaining bolt loose, missing. Mounting brackets bent.

BURNER ACCESS DOOR——Warped, loose; window cracked, blurry. Gasket, asbestos cord missing, burnt, **leaks;** stud assembly broken. Hinge pin stuck, bent.

VENTILATING AIR FAN—**Loose, noisy, wobbly, vibrates.**

HEATER AXLE WHEELS AND SPACING COLLAR—Collar worn, needs lube; cotter pin, washer missing. Rubber tires badly worn (on some models).

THE BURNER



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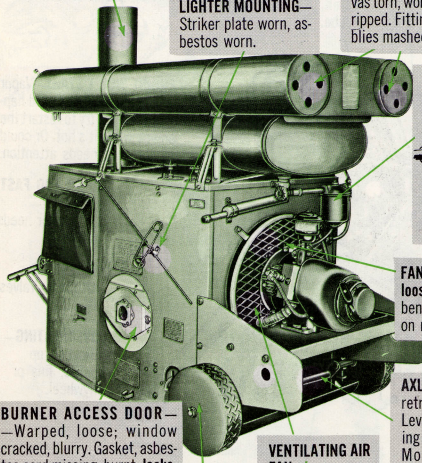

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AIR VENT ASSEMBLY LINE—Clogged; connection threads stripped.

FUEL TANK ASSEMBLY—Leaks, badly dented, badly rusted.

SAFETY LIMIT BULB—Bulb and clip loose; too close to hot surface.

ENGINE FUEL LINE—Leaks; connections loose.

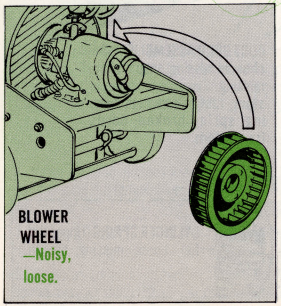
FUEL LEVEL GAGE—Reads wrong; leaks; glass broken, cloudy.

MAIN FUEL SHUTOFF VALVE—Packing gland nut loose. (Should be snug—won't turn when valve turns.)

VAPOR RETURN LINE—Clogged.

FILTER ASSEMBLY (Burner fuel line)—**Gasket leaks; element very dirty.**

HAND WHEELS AND POINTERS—Lock nuts loose, rod fork broken, shaft loose.



BLOWER WHEEL—Noisy, loose.

BURNER AIR DAMPER CONTROL ROD—Bent; **won't work right.**

BURNER

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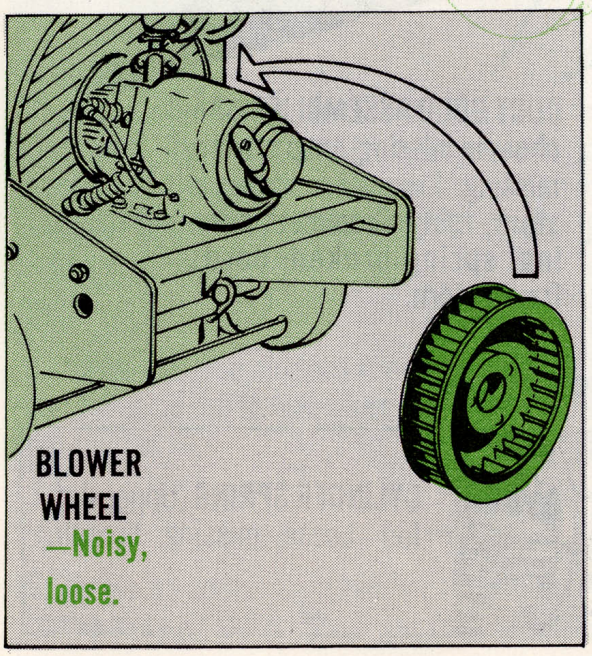

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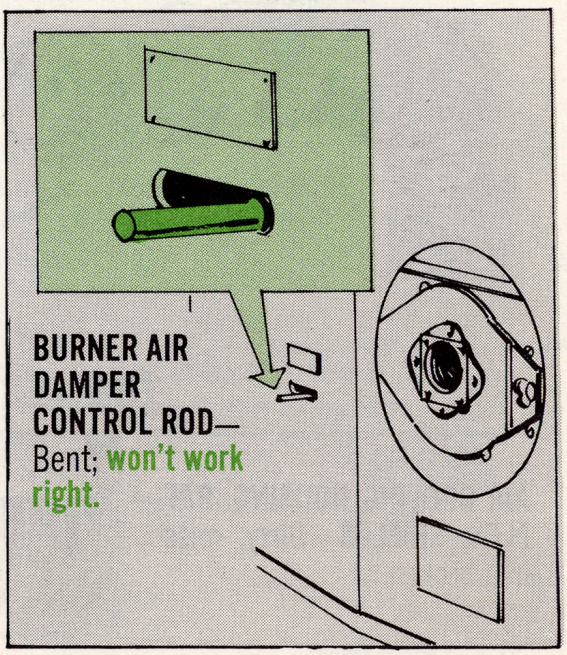


BURNER AIR DAMPER CONTROL ROD—Bent; won't work right.

UNUSUAL BURNER ACTION—The burner fire should be a yellow, sharp-tipped flame about six inches above the flame spreader and should be about the same all around the spreader. If the flame's too low, too high or uneven, something's gaflooey somewhere. Here're some clues to what could be wrong:

MWO'S—Check your DA Pamphlet 310-4 to see what MWO's are called for. Then double-check to see that they've been made.

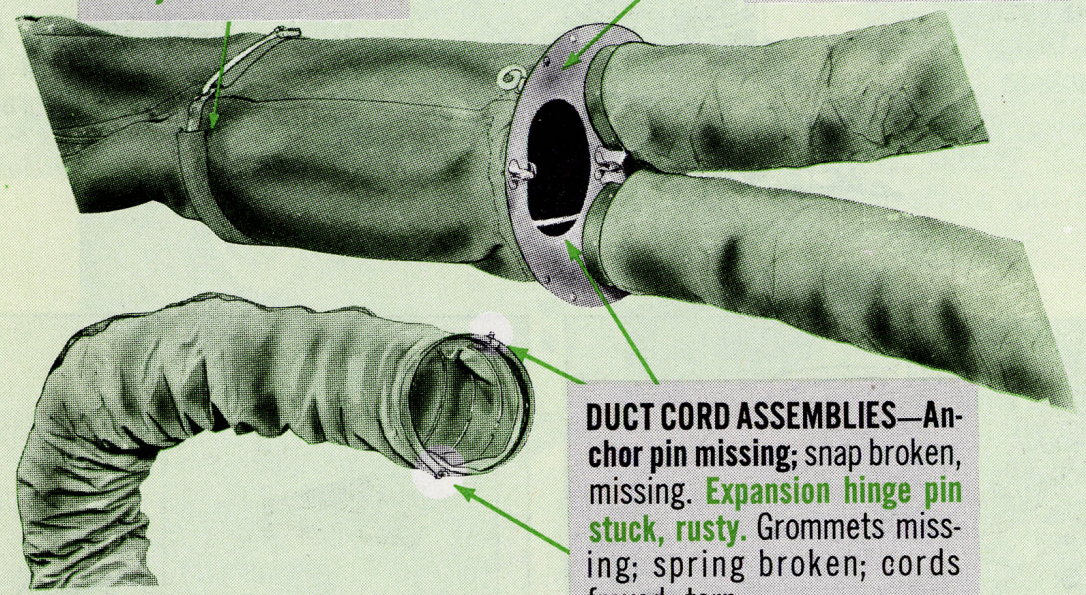
FLAME TOO HIGH—Exhaust stack, combustion air blower clogged; combustion air duct closed; low engine speed.

FLAME TOO LOW—Clogged fuel line or sump; dirty filter. Or maybe you're just low on fuel.

FLAME UNEVEN—Clogged valve system of the inner burner fuel line; or burner's uneven, dirty or loose around gasket at bottom of the combustion chamber.

DUCT LOCKING CLIP ASSEMBLY — Spring too tight or too loose, rusty.

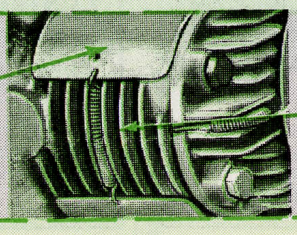
TRANSITION PLATES—Duct connections bent, broken, mashed. Screws rusty, too tight; need lube.



DUCT CORD ASSEMBLIES—**Anchor pin missing;** snap broken, missing. **Expansion hinge pin stuck, rusty.** Grommets missing; spring broken; cords frayed, torn.

COOLING SYSTEM

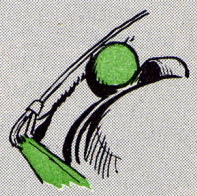
AIR COOLING HOUSING, BAFFLES, SHIELDS—Dirty, missing, broken.



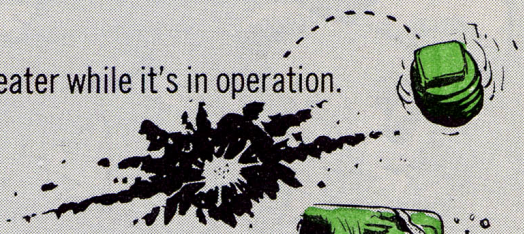
CYLINDER SPRING (Upper Baffle)—Loose, missing, broken.

NEVER-EVER'S FOR HEATERS

Here are some things you don't do around 'em—not if you want to remain warm friends with them:



1. Never run the engine without the governor sprag attached.



2. Never remove the oil filler plug or refuel the heater while it's in operation. You could start a flash fire or explosion.

3. Never put very cold oil in a hot crankcase. Could crack the block.

4. Never use gasoline to wash parts.

5. Never use wire or metal tools to clean fuel vents or other holes.

6. Never try to regulate the fuel with any control but the burner fuel metering valve, nor adjust the temperature upward with any control but the air discharge damper handles. (And then only in freezing or below freezing weather.)

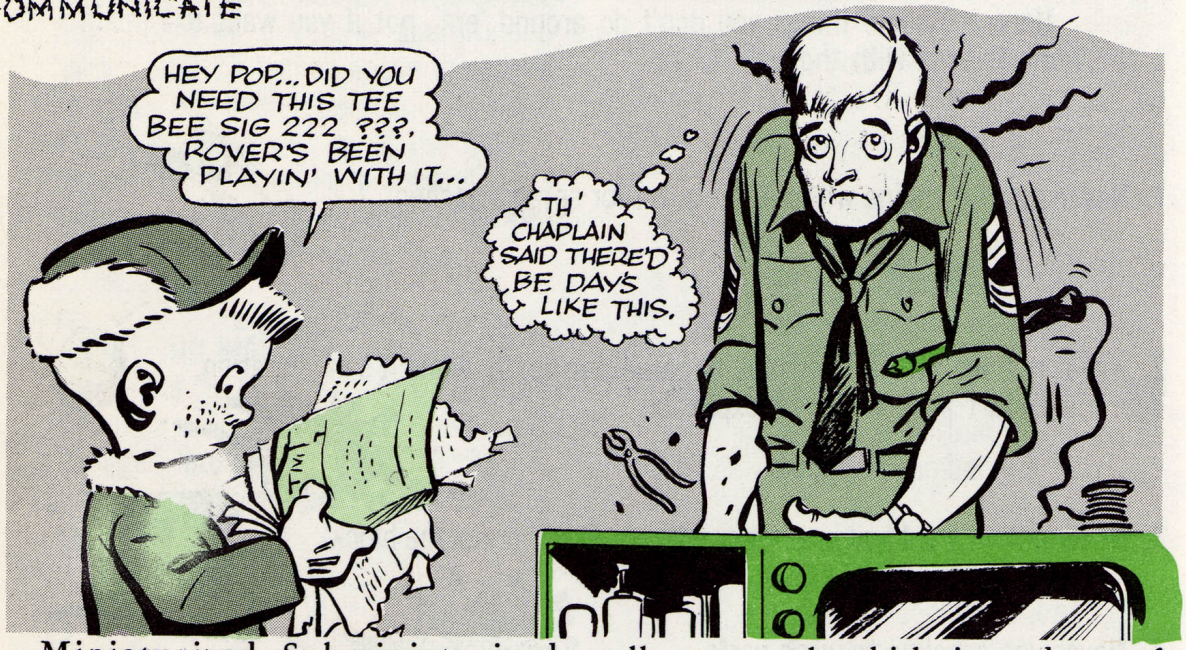
7. Never run the heater indoors without first extending the exhaust stack outdoors. The stack should be high enough to release fumes away from the suction of the propeller intake fan. Otherwise carbon monoxide will be carried through the canvas ducts into other buildings.

8. Never squeeze or block the canvas ducts. Small amounts of back pressure can boost up the temperature in the cabinet and duct system...and likely burn the ducts.

9. Never try to get additional heat by connecting the ducts or other conduits to the exhaust stack. You'll get carbon monoxide.

LET'S COMMUNICATE

SOLDER SUBJECT



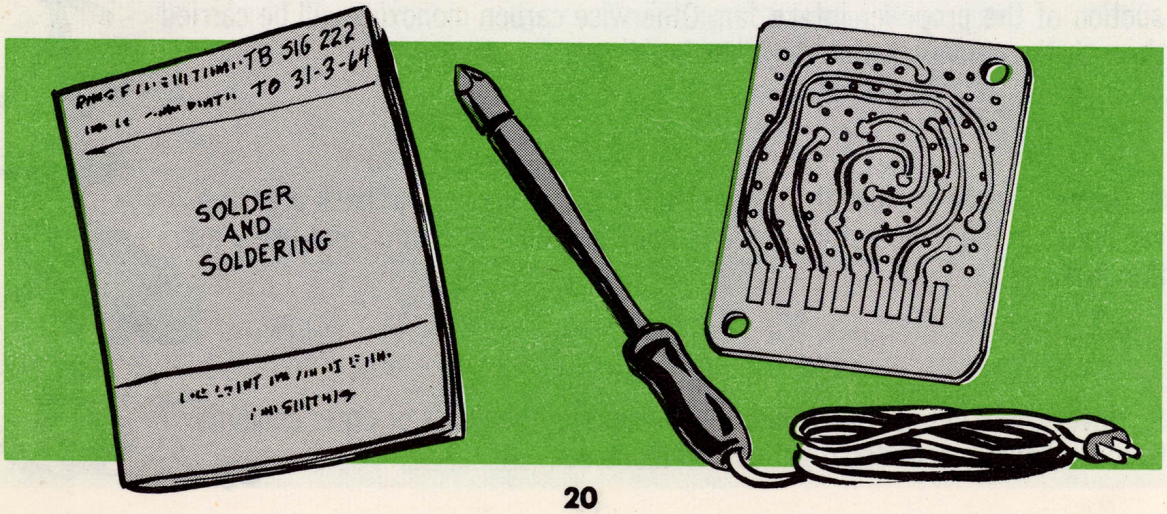
Miniaturized. Subminiaturized. Transistorized. All kinds of new communication gear these days. And it calls for some shifts in maintenance procedures.

F'rinstance, new soldering techniques are needed when working on these tiny components. To be on the safe side, it would be a shrewd move to focus a reading lamp on TB SIG 222 (8 March 60).

So what's it got? Well, for one thing, Chapter 5, Section II talks about "Soldering Printed Circuit Assemblies." She tells you exactly which size and type of solder . . . which soldering iron and soldering aids to use . . . and the correct technique needed when attempting repairs on printed circuit assemblies.

Other solid soldering info, too. Come to think of it, a repairman in too much of a hurry with a soldering iron could really mess up the printing in the circuitry if he doesn't take time to check TB SIG 222.

Before you plug in your iron, check your equipment's Maintenance Allocation Chart for your authority to repair.



REEL PROBLEM—REAL SOLUTION

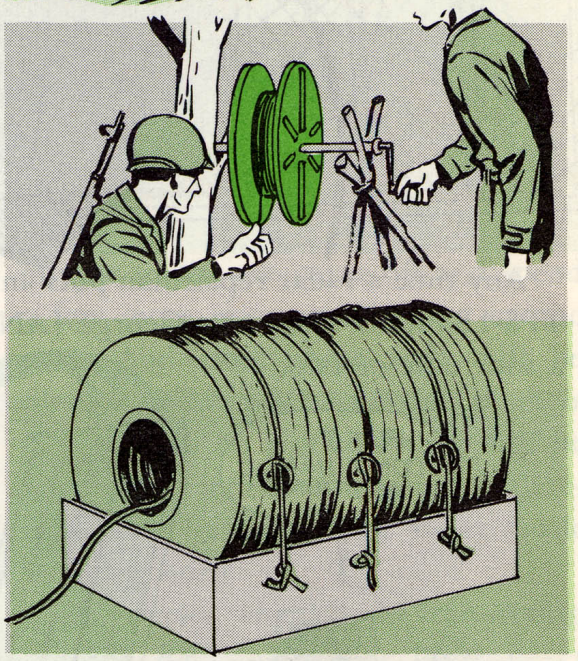
It's A Reel Deal.

That's the word on Change 2 (Oct 59) to TM 11-2240.

Because it talks about a problem facing just about every outfit in Uncle's army that rolls out WD-1/TT wire. Actually, the problem's not rolling out the wire—but rollin' it back in again.

The idea, of course, is to recover those ½-mile lengths of telephone wire . . . press them back into their canvas covers . . . and wind up with a ready-to-use MX-306A/G wire dispenser.

Once you shape up the home-made wire reel described in that Change 2, you'll be ready to roll.



SCREEN YOUR TROUBLE

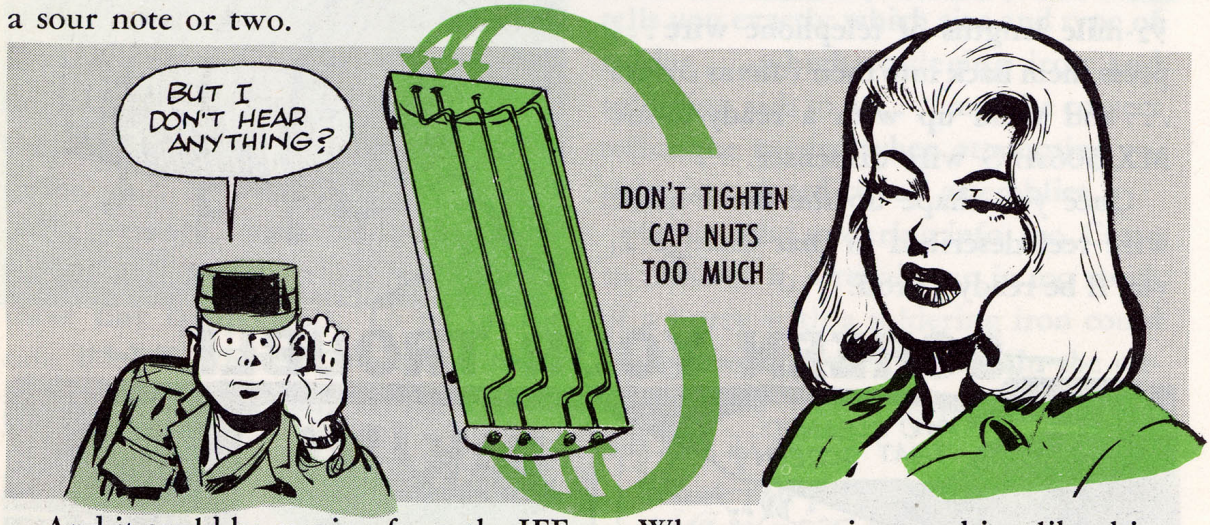
The lights are out . . . the projector is running . . . and the maintenance class is in session.

And the instructor is passing along some solid info on maintenance. But even as the instructor points out a few things on the screen, he himself may have forgotten a lesson or two about those BM-1 or BM-6 screens. Or any screen, for that matter.

Which is: Never use anything as a pointer that'll leave a mark that'll have to be washed off—crayons, chalk, dirty pointers, etc.

Any time that water or cleaner has to be used to remove spots from those BM's—the special surface will be permanently streaked. Won't show up, of course, 'til the lights go out and the projector is turned on.

Any time a radar repairman puts an ear to the horn of the Antenna AS-673/TPS-1E on his Tipsy One George (AN/TPS-1G) there's a chance he might hear a sour note or two.



And it could be coming from the IFF antenna reflector elements inside the horn cover. Those reflectors are nothing more than thin rods arranged side-by-side that aim the IFF signal.

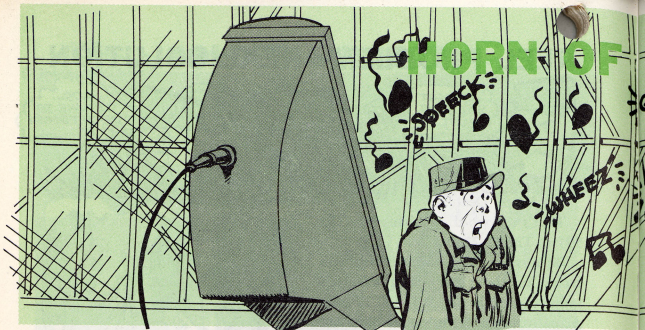
If they are broken or bent or thrown out of alinement—then the strange sounds will come from the gent trying to read the scope! And anyone with a wrench and too much pressure on the external cap nuts that hold those rods in place can scramble the scope and the whole operation.

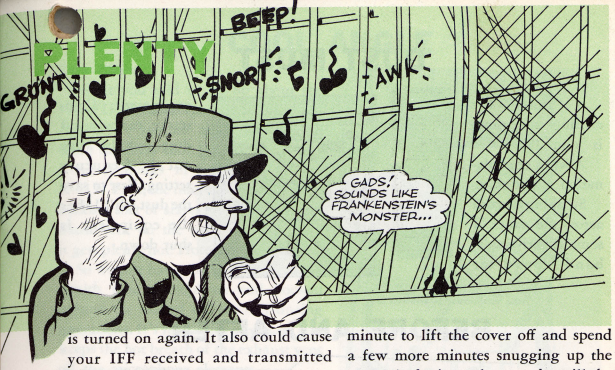
What goes on is something like this: tightening those nuts on the outside of the horn cover too tight can cause the reflector rods inside to turn and shift position.

This happens because the cap nut is tightened directly on the threaded end of the rod itself. Too much pressure can easily snap the rod—causing it to fall over against its neighbor. Or fall against the cover itself.

That leads to a fire in the feed horn cover just as soon as the IFF transmitter

HORN OF PLENTY





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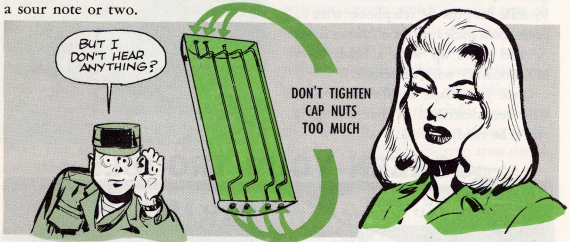

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What goes on is something like this: tightening those nuts on the outside of the horn cover too tight can cause the reflector rods inside to turn and shift position.

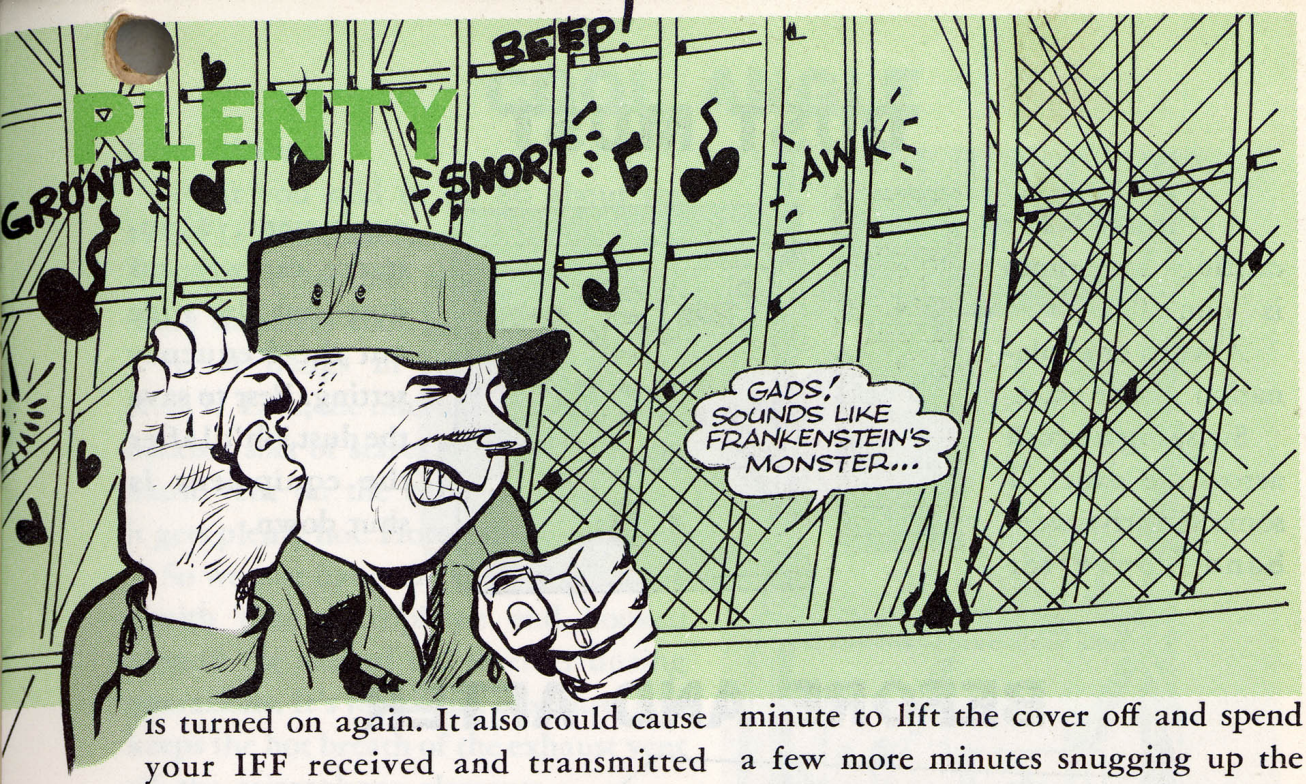
This happens because the cap nut is tightened directly on the threaded end of the rod itself. Too much pressure can easily snap the rod—causing it to fall over against its neighbor. Or fall against the cover itself.

That leads to a fire in the feed horn cover just as soon as the IFF transmitter is turned on again. It also could cause your IFF received and transmitted signal to end up way off the beam—lost out in space. Which results in weak returns. It's a shrewd maintenance man who looks into his horn comes time to pull a routine preventive maintenance check.

And next time you're tightening around on the Tipsy, feel the reflector rod nuts on the outside of the cover. If they're snug—and the set's been humming along OK—pass on to something else.

But if they're loose, it takes only a minute to lift the cover off and spend a few more minutes snugging up the nuts. And since those rods will be plainly visible while you tighten their nuts, there's no risk that they will be snapped off or wind up out of alinement. The result will be sweet music from the horn.

Of course, when you're connecting the IFF RF cable to the horn, never apply too much pressure. Finger tight is fine. Too much muscle could rotate your IFF dipole antenna so's it touches the reflector—sending the whole works into a scramble.



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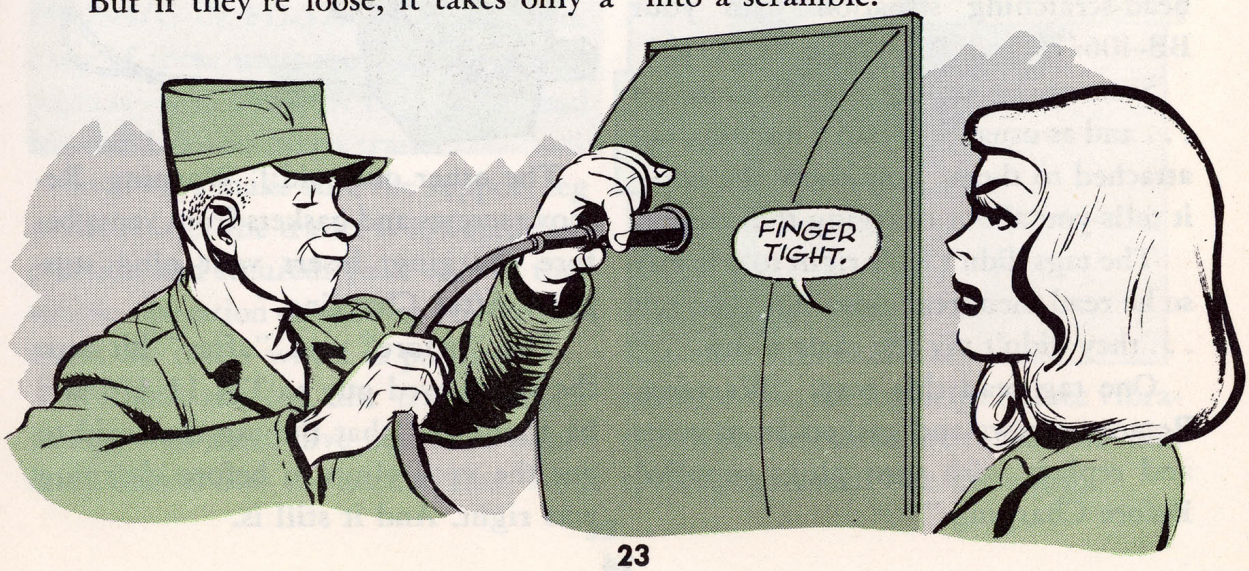
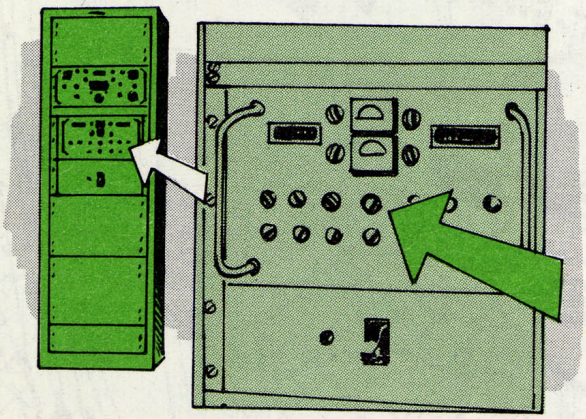


DUST MUST

A "must" for dusting sometimes is "don't."

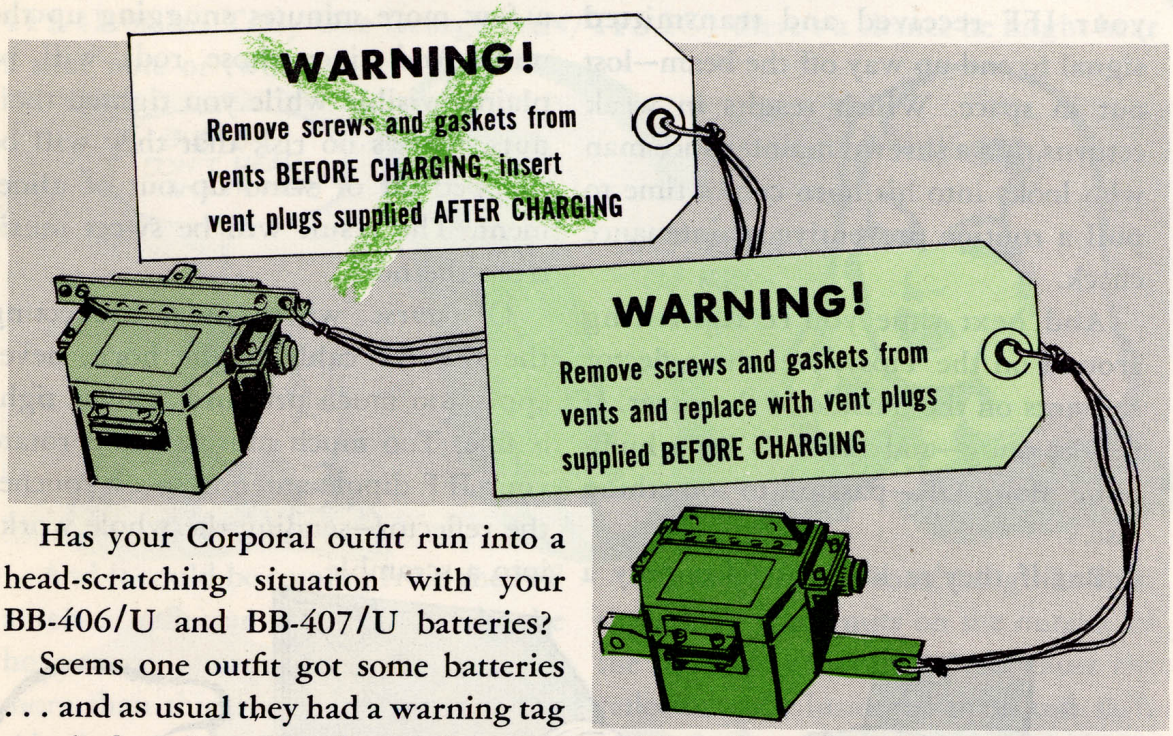
A word of explanation about that.

Swishing a brush across the panel of some sensitive sideband converter



equipment, f'rinstance, can wipe off dust—but also wipe out the frequency setting. Best to save the dust job 'til after the equipment is shut down.

BEFORE AND AFTER



Has your Corporal outfit run into a head-scratching situation with your BB-406/U and BB-407/U batteries?

Seems one outfit got some batteries . . . and as usual they had a warning tag attached to them. You know the one—it tells you about charging the battery.

The tags didn't look right to one guy so he read them real close. Sure enough . . . they didn't say the same thing.

One tag read this way: "Warning. Remove screws and gaskets from vents and replace with vent plugs supplied Before Charging."

The other one said:" Warning. Remove screws and gaskets from vents before charging, insert vent plug supplied After Charging."

The "before" and "after" bit sent the sharp-eyed guy to TM 11-416 and he found out that the tag that said to put the vent plugs in before charging was right. And it still is.

COOL ANGLE

Dear Editor,

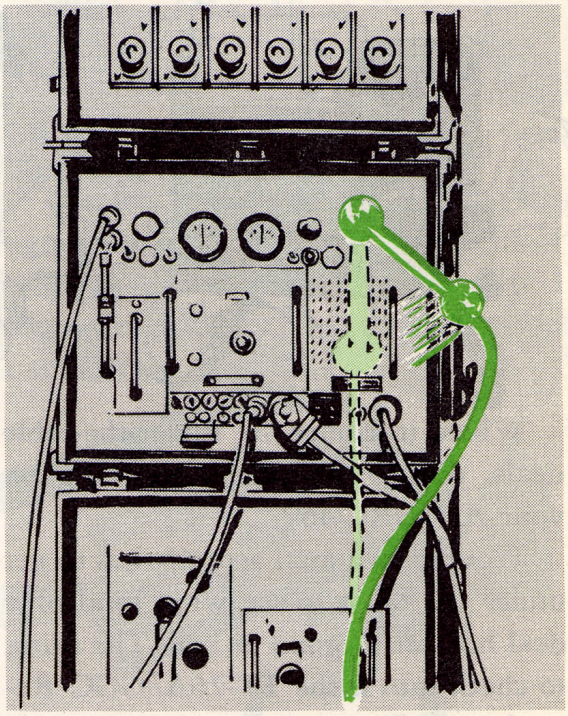
What you said in PS 86 about the H-90/U Handset came through 5x5. But here's another angle on keeping those handsets cool.

As it hangs in its cradle on the R-417/TRC, the microphone end of the handset sort of stares right into the exhaust vent on the control panel. And it gets plenty hot. Hotter than it should.

So we just hang the H-90 at an angle —with that microphone end hooked around the side of the receiver during operations. It's just about as secure, and keeps the hot breath of the exhaust vent off the microphone elements.

Anytime the set is shut down—we let 'er hang straight down.

(Ed Note: Cool, Sarge, nice and cool.)



SP-4 John Wardlow
APO 696

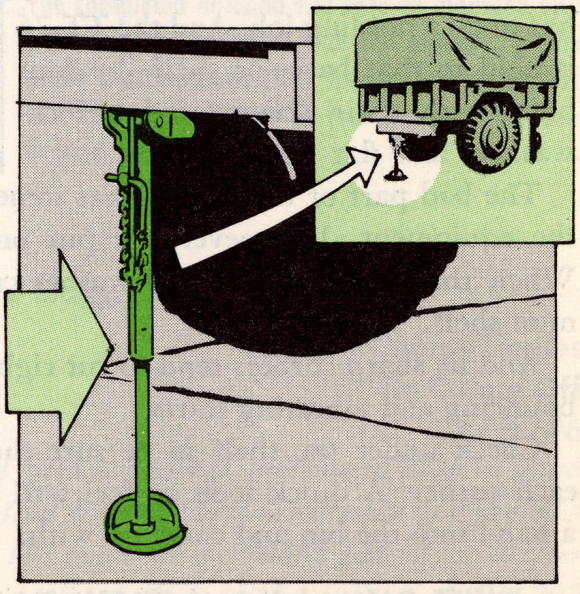
EXTRA LEG

A little extra support at the right place always comes in handy.

And sometimes it's downright important.

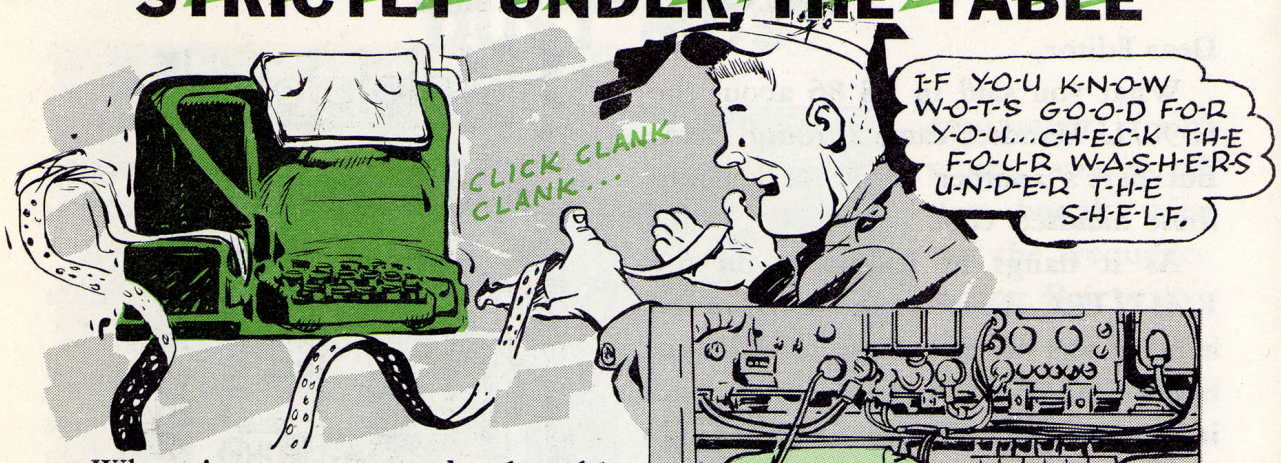
Like whenever you're setting up a PU-294/G or PU-378/G in the field. Each of these units weighs over 2,500 pounds—which is close to capacity load for the 1½-ton cargo trailer.

So always make sure the support leg at the rear of the trailer is lowered into position and secured. Take care of that simple operation as soon as you've fastened the caster wheel in position.



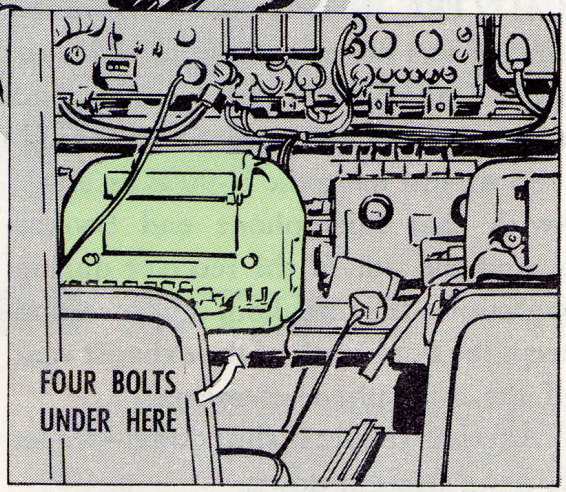
Without the leg, the trailer might just go into a tail dive next time somebody climbs into the rear section. And in any event, the leg helps reduce vibration when the units are turned on—and spares your outfit one extra gig.

STRICTLY UNDER THE TABLE



When it comes to under-the-table deals, there's one worth checking on your AN/GRC-46.

Trouble is, a man actually has to get under the table to see what kind of a deal he has . . . good or bad. The thing to check into is the TT-76A/GGC Re-perforator-Transmitter.



It sits on an aluminum shelf inside the shelter, along with the rest of the Angry 46 components—and the whole works has to hang on tight when the ¾-ton truck takes off cross-country. Or anywhere.

The aluminum base that the reper-forator-transmitter is fastened to really has to do a holding job. And the TT-76 is held to that base—or shelf—by four bolts with their accompanying lock-washers and flat steel washers.

The bad part of the deal is that sometimes those flat steel washers are left off the equipment. Just never got put on. Not on all Angry 46's, but on some. When that happens, the lockwasher comes directly in contact with the aluminum shelf.

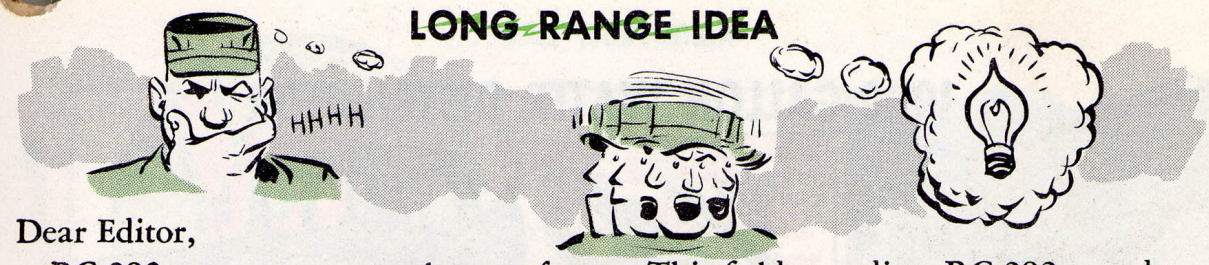
And its sharp corners tend to cut right through the aluminum base when the bouncing and vibrating starts.

Check under the shelf to be sure those four washers are in position—one in each corner. A quick look or feel will tell the story. If any are missing, reach a hand into the bin and come up with:

WASHER, FLAT: steel, ¾ in od; FSN 5310-514-6859. (Or any washer that'll fit, for that matter.)

With these in position, your set can have the shakes from dawn 'til dark without risking a ripped base or loose mounting.

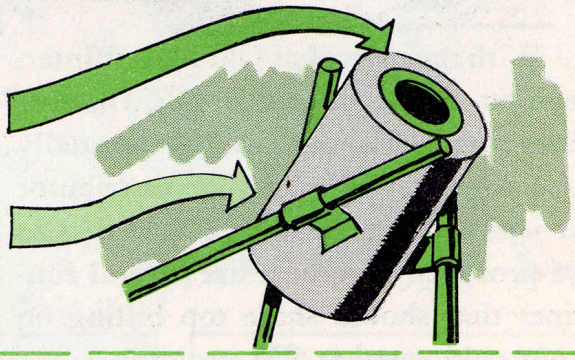
LONG RANGE IDEA



Dear Editor,

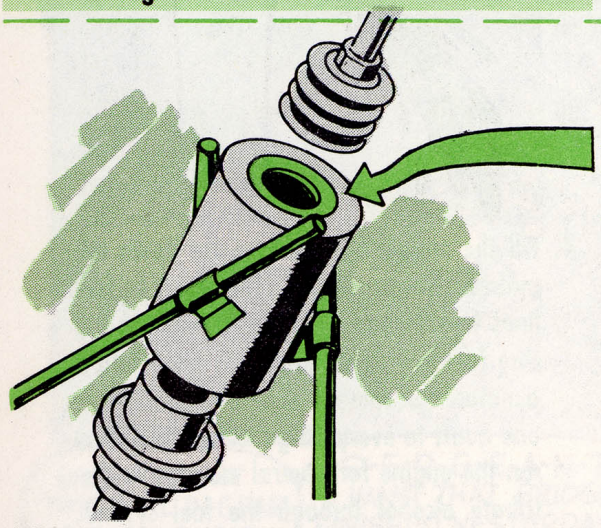
RC-292 antennas are real great for extending communications with the AN/GRC radios over a long distance. However, not enough of these antennas are authorized for use in all extended range radio nets.

This field expedient RC-292 was designed by PFC Rudolph Lamprecht of the 67th Armor. It is electrically equal to a normal RC-292 and can be used in a similar manner.



You use a No. 2½ tin can, with three female ends from discarded MS-116 mast sections. The sections should be about eight inches long.

You then solder each of these mast sections to the can so that they form a 45 degree angle with the base plane of the can. A blowtorch is your best bet for soldering.



With a small pair of tin snips make a hole in the bottom of the can so that it will receive the antenna mast base AB-15. Then you mount it in the usual manner.

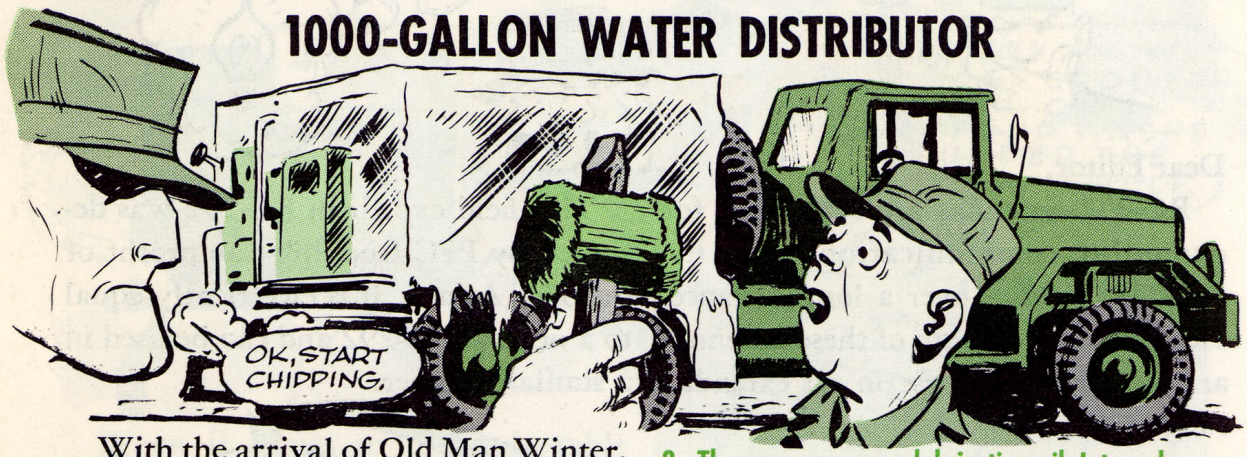
The completed antenna can now be mounted on a pole or other device so that the attached ground plane mast sections clear the ground by at least several feet. A 15- to 30-foot wooden pole does a good job.

Thought you might like to pass the idea along.

Captain George Degles
Bn Comm Off
APO 696

(Ed note: Will do, Captain. An excellent field expedient and one to keep in mind when the real item can't be had. Units that have a permanent need for the RC-292 shouldn't hide their wants by filling the gap with a cobbled gadget, no matter how good, tho. If mission and tactical considerations make use of an RC-292 desirable, initiate a recommendation for a change to the TOE. And while you're waiting for a changed TOE, you might get 'em authorized temporarily under Change 1 to AR 725-5 dated 4 May 59).

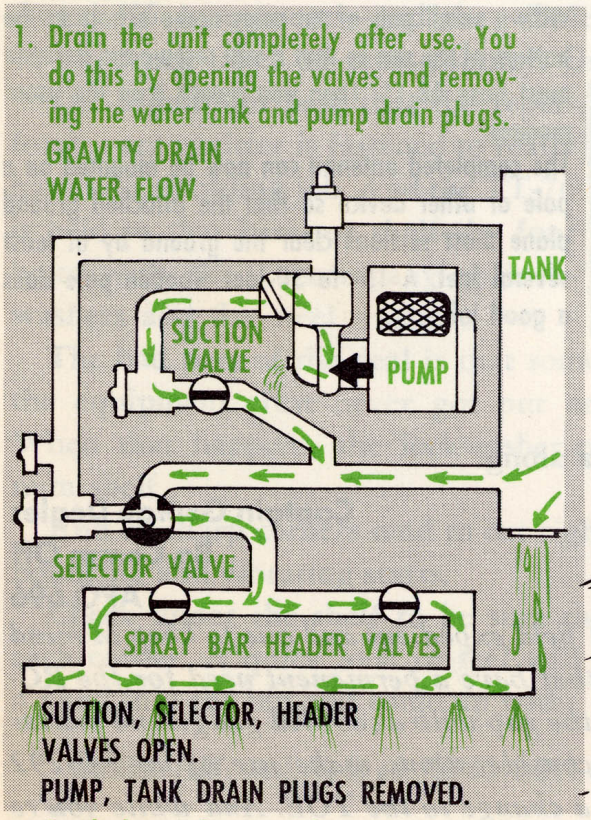
1000-GALLON WATER DISTRIBUTOR



With the arrival of Old Man Winter, equipment like your water distributors take special handling. While normally you wouldn't operate your distributor at temperatures below 32°F., it has to be protected and there are several routines that should share top billing on your cold weather PM program.

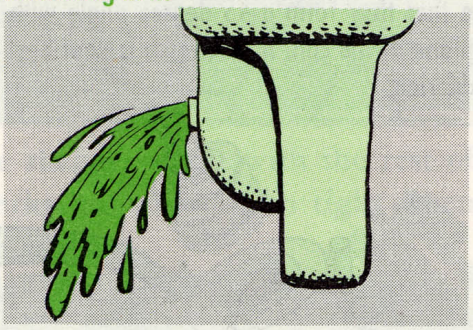
WINTERIZING

1. Drain the unit completely after use. You do this by opening the valves and removing the water tank and pump drain plugs.

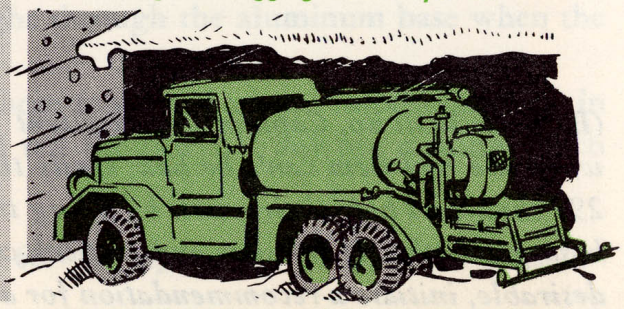


2. Flush out the pump housing, suction line, and discharge line with clean water.

3. Then you run some lubricating oil, Internal Combustion Engine, Preservative, Grade 1 (Index 5620, SM 10-1-C4-1 dated Sep 59) through the pump to force out the water remaining in it.



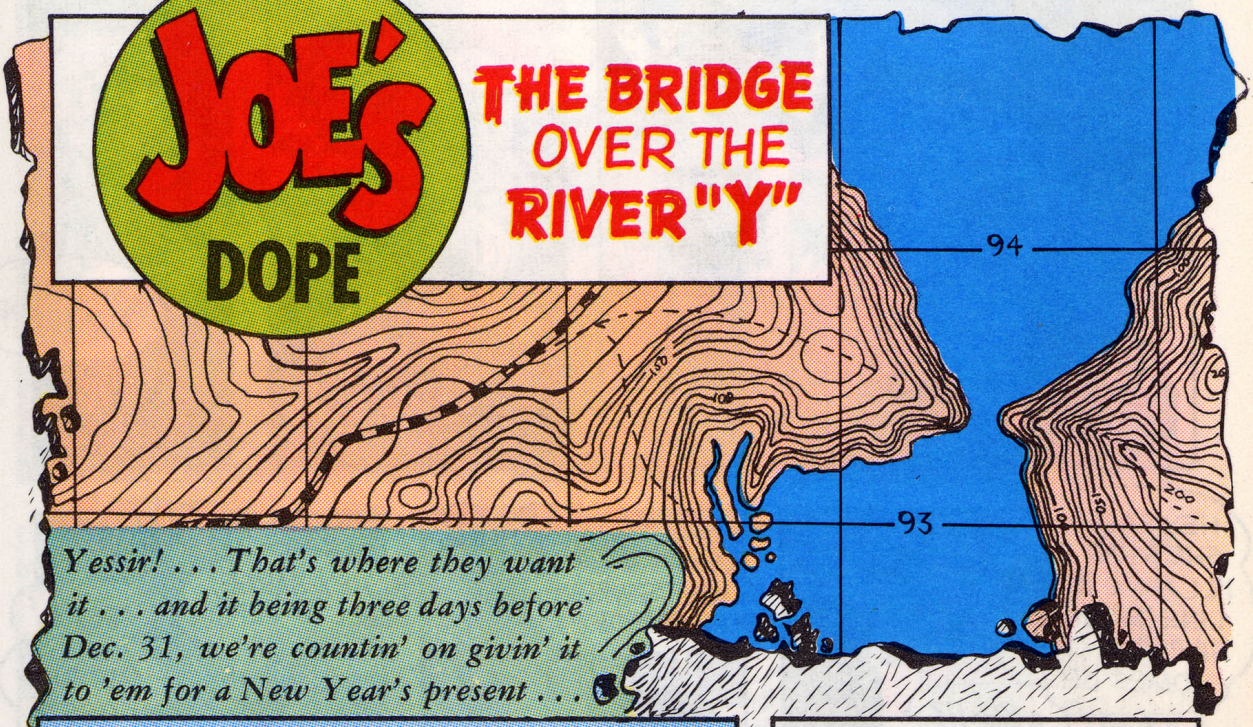
4. Fill the engine fuel tank to cut down the moisture condensation. (The water in fuel lines freezes and forms ice crystals that'll clog fuel lines and carburetor jets.) Add a denatured or methyl alcohol at the rate of one quart to every 30 gallons of fuel. You run the engine for several minutes to distribute alcohol through the fuel system. This'll help keep the condensation from freezing and clogging the fuel system.



5. Locate the unit out of the weather using canvas, building, or hill as a windbreak.

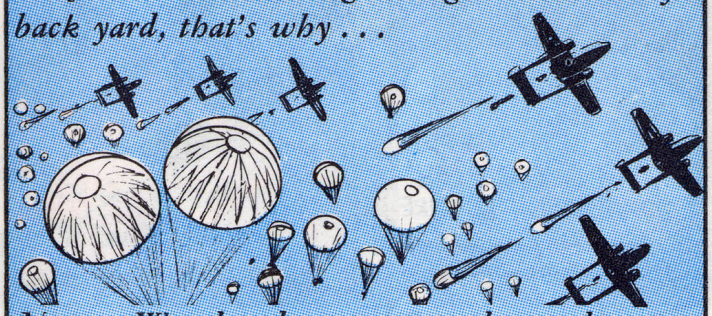
JOE'S DOPE

THE BRIDGE OVER THE RIVER "Y"



Yessir! . . . That's where they want it . . . and it being three days before Dec. 31, we're countin' on givin' it to 'em for a New Year's present . . .

Why? 'Cause this bridge is right in th'enemy's back yard, that's why . . .

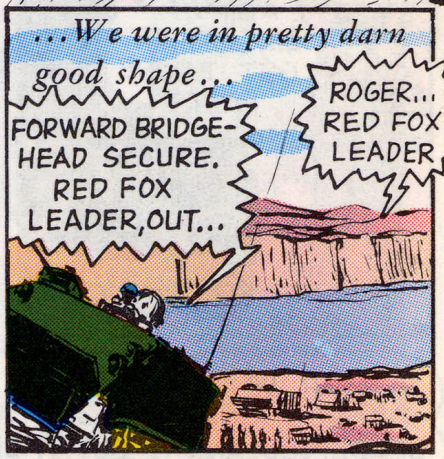


Man . . .We already got troops dropped across, and with them holding the other end . . .

. . .We were in pretty darn good shape . . .

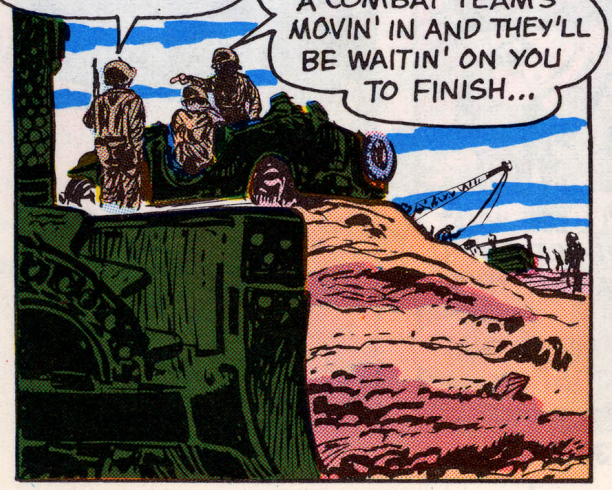
FORWARD BRIDGE-HEAD SECURE. RED FOX LEADER, OUT...

ROGER... RED FOX LEADER

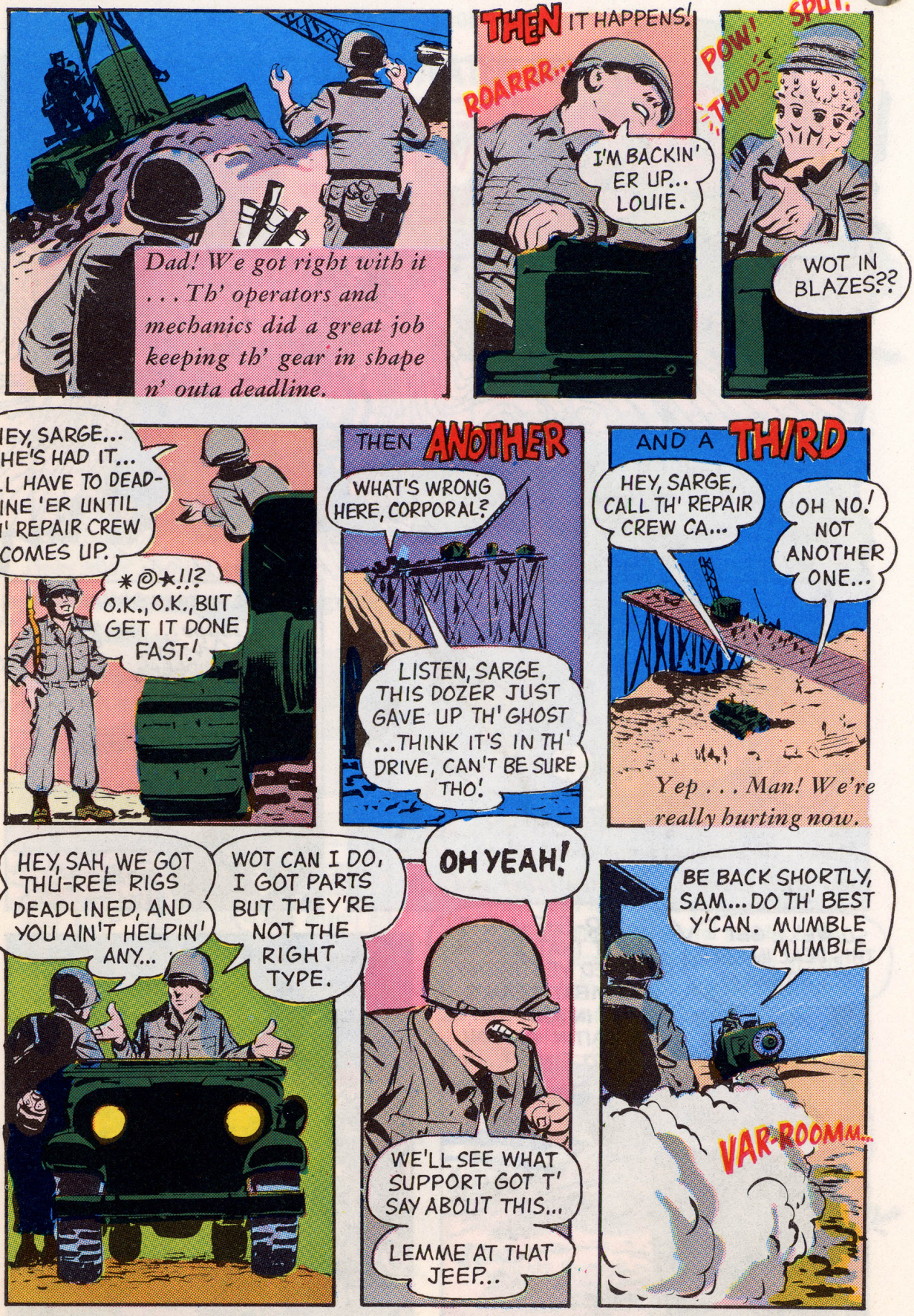


SO, WE'LL GET THIS DEAL IN GEAR, SIR...NO SWEAT.

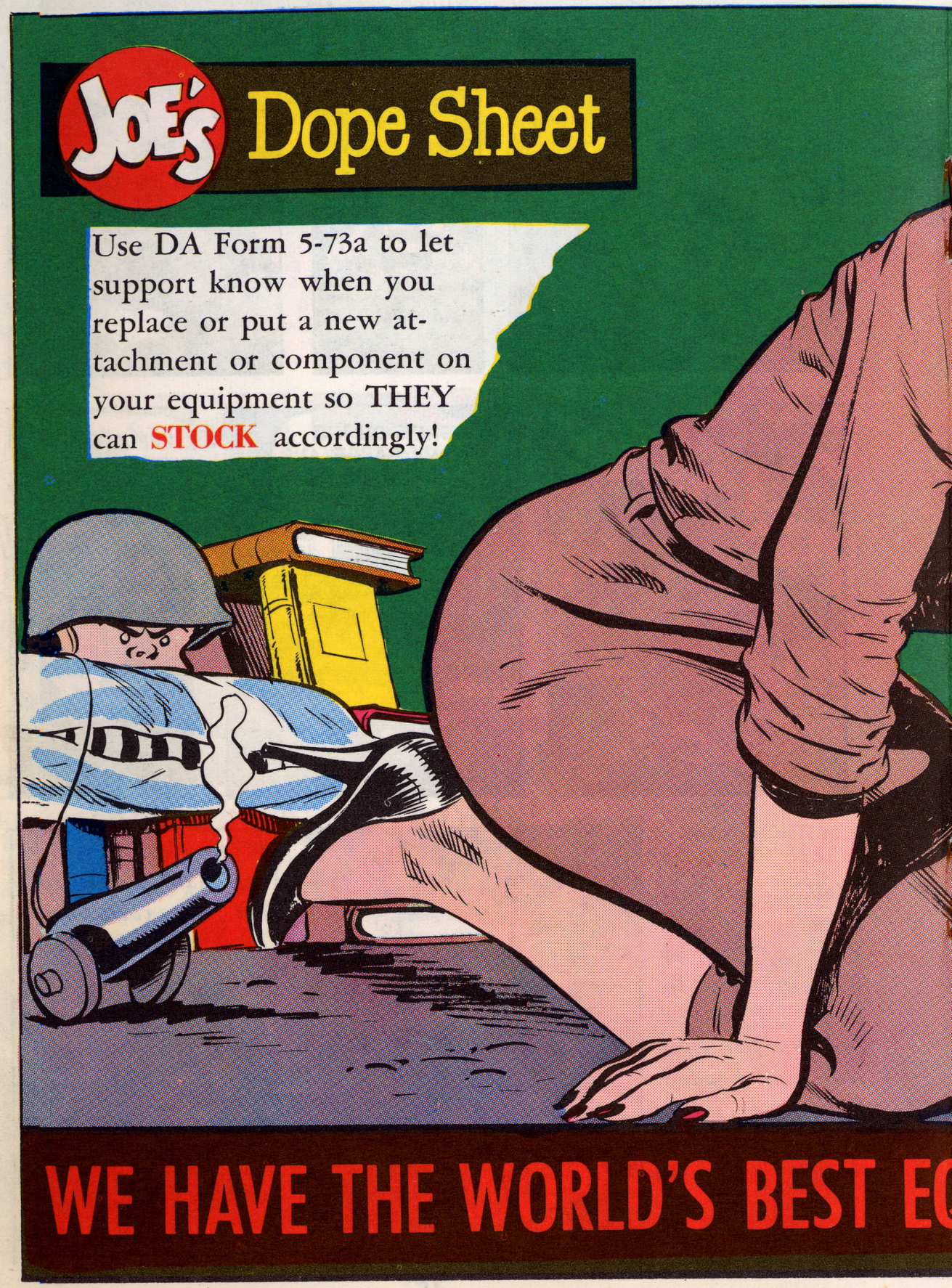
S-E-R-G-E-A-N-T I WANT THAT BRIDGE FINISHED YESTERDAY, A COMBAT TEAM'S MOVIN' IN AND THEY'LL BE WAITIN' ON YOU TO FINISH...



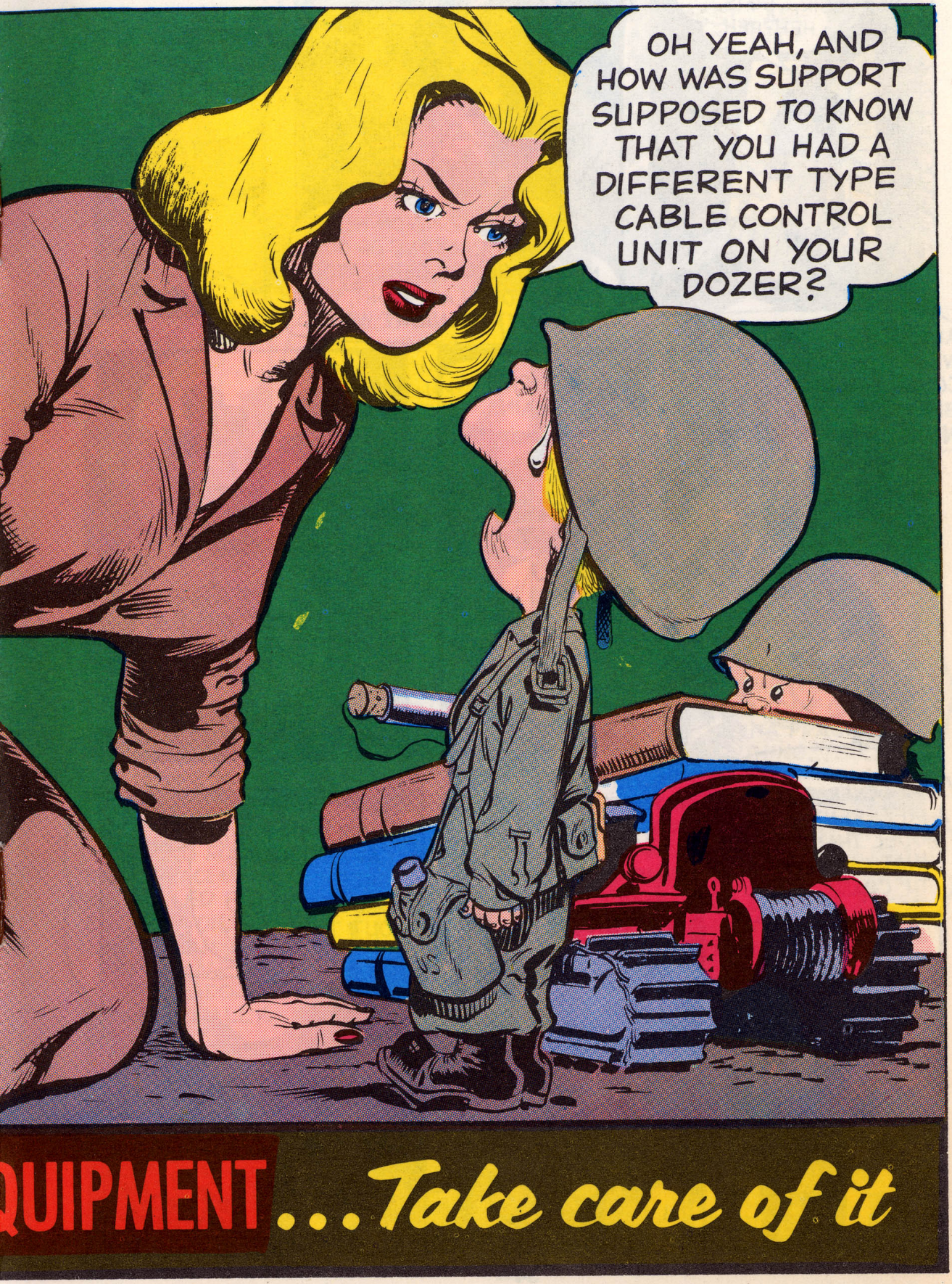
'N' sure enough . . . There they were and I hear there's plenty o' heavy stuff right behind 'em. All ***waitin' on us to finish . . .***


Dad! We got right with it . . . Th' operators and mechanics did a great job keeping th' gear in shape n' outa deadline.
THEN IT HAPPENS!
ROARRR...
I'M BACKIN' ER UP... LOUIE.
POW!
SPUT!
THUD...
WOT IN BLAZES??
HEY, SARGE... SHE'S HAD IT... I'LL HAVE TO DEADLINE 'ER UNTIL TH' REPAIR CREW COMES UP.
*@★!!? O.K., O.K., BUT GET IT DONE FAST!
THEN ANOTHER
WHAT'S WRONG HERE, CORPORAL?
LISTEN, SARGE, THIS DOZER JUST GAVE UP TH' GHOST ...THINK IT'S IN TH' DRIVE, CAN'T BE SURE THO!
AND A TH/RD
HEY, SARGE, CALL TH' REPAIR CREW CA...
OH NO! NOT ANOTHER ONE...
Yep . . . Man! We're really hurting now.
HEY, SAH, WE GOT THU-REE RIGS DEADLINED, AND YOU AIN'T HELPIN' ANY...
WOT CAN I DO, I GOT PARTS BUT THEY'RE NOT THE RIGHT TYPE.
OH YEAH!
WE'LL SEE WHAT SUPPORT GOT T' SAY ABOUT THIS...
LEMME AT THAT JEEP...
BE BACK SHORTLY, SAM... DO TH' BEST Y'CAN. MUMBLE MUMBLE
VAR-ROOMM...

Well, I don't have to tell you, pal . . . We're up th' creek without a paddle. Boy . . . I hooked the spurs to that jeep, and headed for th' D.S.U., burnin' rubber all th' way . . .

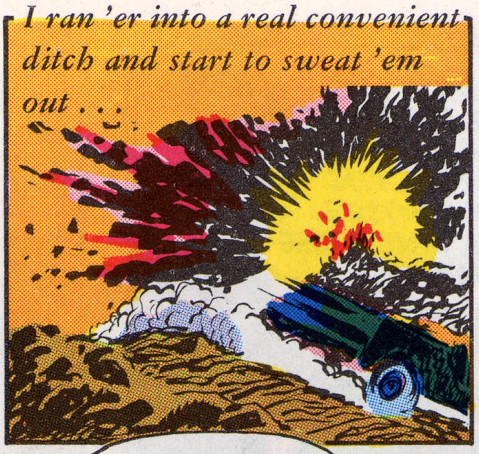

JOE'S Dope Sheet
Use DA Form 5-73a to let support know when you replace or put a new attachment or component on your equipment so THEY can STOCK accordingly!
WE HAVE THE WORLD'S BEST EQ

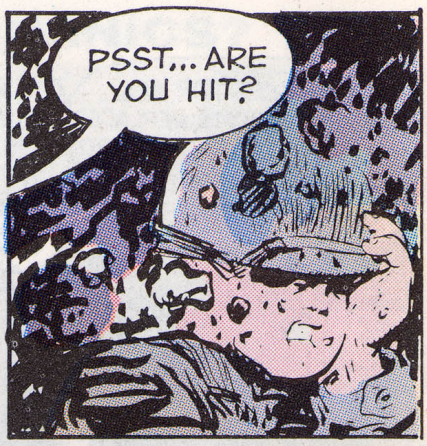
JOE'S Dope Sheet
Use DA Form 5-73a to let support know when you replace or put a new attachment or component on your equipment so THEY can STOCK accordingly!
OH YEAH, AND HOW WAS SUPPORT SUPPOSED TO KNOW THAT YOU HAD A DIFFERENT TYPE CABLE CONTROL UNIT ON YOUR DOZER?
WE HAVE THE WORLD'S BEST EQUIPMENT...Take care of it

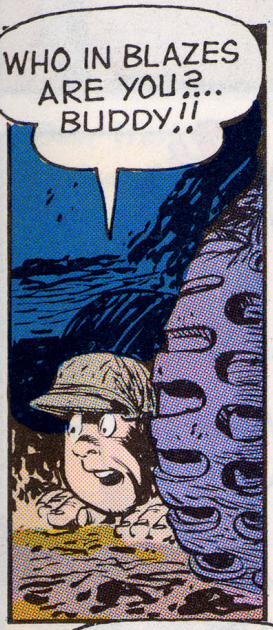

OH YEAH, AND HOW WAS SUPPORT SUPPOSED TO KNOW THAT YOU HAD A DIFFERENT TYPE CABLE CONTROL UNIT ON YOUR DOZER?
QUIPMENT...Take care of it

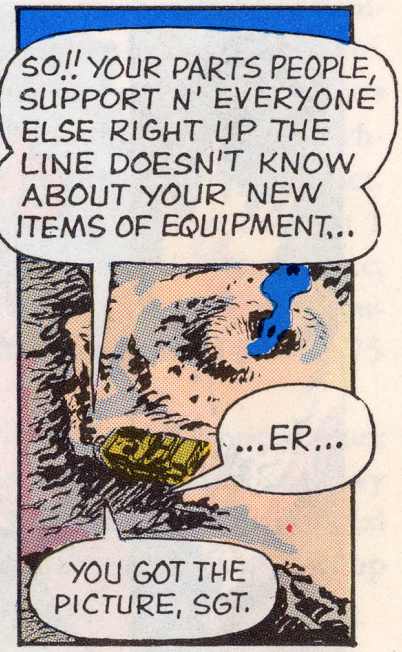
ER..." MORNING," SIR... SGTS... HEH-HEH.
WHAT'S GOING ON HERE, CORPORAL? ONE OF OUR NEW AUXILIARY GENERATORS CONKED OUT LAST NIGHT, WHICH MEANT NO NIGHT WORK...
...WHICH IS BAD ENOUGH, BUT OUR HEAVY RIGS ARE GOING OUT TOO. REPAIR TORE IT DOWN...
AND WHEN MAINTENANCE WENT TO WORK, THEY COULDN'T REPLACE PARTS, BEE-CAUSE THERE'S NONE AROUND!!
ULP!
NOW! CORPORAL, EXPLAIN...
CLICK
CRACK
YEAH- WOT GIVES, SAM, OL' BUDDY...
THAT GENERATOR WAS A DIFFERENT MAKE N' MODEL THAN TH' ONE THAT CAME WITH TH' CRANE... SIR!
BUT DOES ANYBODY CLUE ME IN WITH A 5-73a? SO HOW TH' HECK DID I KNOW TO STOCK REPLACEMENT PARTS FOR IT...
HOLD TH' FORT, CAPT'N. LEMME CHECK OUT GROUP, N' FIND OUT THE STORY THERE.
VAROOOM...

On th' way t' Group, I get slowed down by some incoming H.E. rounds . . .









SAME GOES FOR ALL MODIFICATIONS, REPLACED COMPONENTS, OR SWITCHED MAKES OR MODELS OF ACCESSORIES.
I KNOW IT'S NOT GONNA DO MUCH GOOD NOW, SIR... BUT I'LL HIGH-TAIL IT DOWN TO TH' BRIDGEHEAD N' BREAK OUT TH' 5-73a'S... WE STILL GOTTA HAVE THOSE PARTS, SIR.
SHELLIN'S STOPPED, SO I'M TAKING OFF. SEE YA, LOOTENANT.
RIGHT... SGT.
Meanwhile . . . th' combat team was rushed across further upstream on account of the delay . . . that left us wide open, and boy!!! They didn't wait too long either. . .
NOW, LET'S START ALL OVER AGAIN AND GET THOSE 5-73a'S WORKED UP ON THESE RIGS. IT'S TOO LATE FOR US BUT MAYBE SOME OTHER OUTFIT WON'T GET CAUGHT SHORT!
HEY, SARGE!
WOT NOW?
IT'S CLOSE TO MIDNIGHT... HAPPY NEWY...
CHUG
CHUG
CHUG
CHUG
HIT TH' DIRT!!
WHAM!!
CLICK
NOW, IF THERE'RE ANY QUESTIONS ABOUT WHY 5-73a'S ARE IMPORTANT...

HOW MANY MECHANICS?

Dear Half-Mast,

Our company only has one mechanic and one helper for 23 vehicles but some companies have more mechanics than that and fewer vehicles.

How come? I thought all companies were supposed to be equal.

Also, we got only one set of tools to take care of the whole 23 trucks and that's unhandy when mechanic and helper are working in different places. How can we get more sets of tools?

Sgt M. R.

Dear Sgt. M. R.,

You can't always tell from the number of vehicles how many mechanics it should take to maintain 'em.

SR 310-30-15 (10 July 53) authorizes 1 mechanic for every 12 motor vehicle "equivalents." Para 40 of that SR explains how to figure the "equivalents."

You count trailers up to one ton at 1/10th point; 1-ton to 3½-ton trailers at 3/10th point; 3½-ton to 15-ton trailers at 2/5th point and trailers over 15 tons at 4/5th point.

Cars, motorcycles, and trucks up to and including 2½-ton (except amphibian) count 1 point each.

Wheeled and tracked vehicles over 2½-tons and up to 10 tons, inclusive (except amphibian), 2 points.

Wheeled and tracked vehicles over 10 tons, and amphibians 2½ tons and over, 3½ points.

It could be that the companies you know with more mechanics have vehicles that rate higher in the point scale.

AR 310-34 (26 July 55) authorizes only one individual tool set per mechanic, with the helper using the same set. Para 66 of that AR spells it out that 1 Tool Set, Organizational Maintenance, 2d Echelon No. 1, Common, per company, is all that's authorized for 8 to 75 vehicles.

O'course, if your vehicles need more servicing than normal because of heavy usage, your CO can ask for a special authorization for more tools to keep up with the workload.

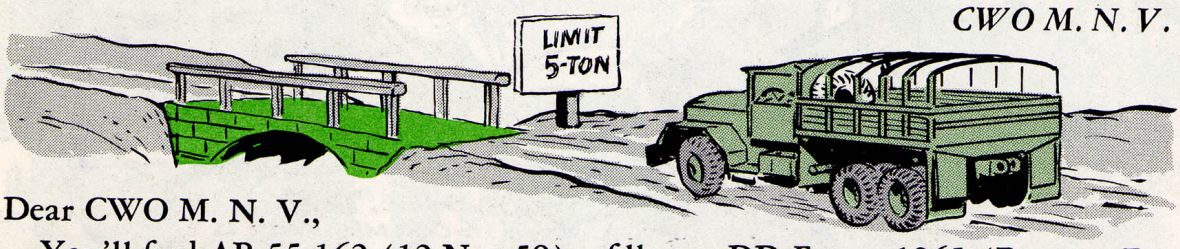
Half-Mast

HEAVY TRUCK PROBLEMS

Dear Half-Mast,

Local state police tell me our 10-ton trucks are too big for some of their bridges around here. I remember reading an Army Regulation on military vehicle size and weight limits. Can you tell me where to find this info?

CWO M. N. V.



Dear CWO M. N. V.,

You'll find AR 55-162 (12 Nov 59) has the dope on moving oversize or overweight vehicles, Sir.

This AR lines it out that no vehicle bigger or heavier than allowed by state regulations will move over public highways without permission from the state authorities.

To get this permission, except for local travel, your transportation officer fills out DD Forms 1265 (Request For Convoy Clearance) and 1266 (Request For Special Hauling Permit) like it says in the AR.

The AR also applies to long distance movements of 10 or more vehicles in a column or the dispatching of 10 or more vehicles per hour to the same destination over the same route, even if they're not oversize or overweight.

Half-Mast

COVER YOUR RODS

Dear Half-Mast,

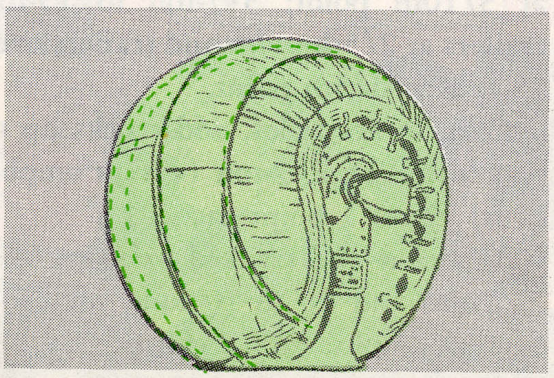
Our Nike-Hercules site took a beating from a windstorm not long ago. And when it was over, we counted two ripped track radome covers and a couple of busted fiberglass rods that support the covers.

The problem is . . . how do we get new covers and rods? I don't see them listed in TM 9-1430-250-20P/3.

Sgt T. R.

Dear Sergeant T. R.,

They're in TM 9-1430-250-20P/3 (4 Dec 59)—that's for sure. The cover's listed under FSN 1430-564-9890 . . . the 316½-in long rods under FSN 1430-535-7482 . . . and the 260½-in long rods under FSN 1430-535-7481.



Half-Mast

RETRACT AND USE JACKS

Dear Half-Mast,

The way I read the safe-load data plate for the M62 wrecker—Fig 51 of TM 9-8028 (13 Jun 55)—I can increase the safe load for the boom by using a three-part line. Right, Sarge?

I need this extra lifting capacity for missile jobs.

Mr. E. A. A.

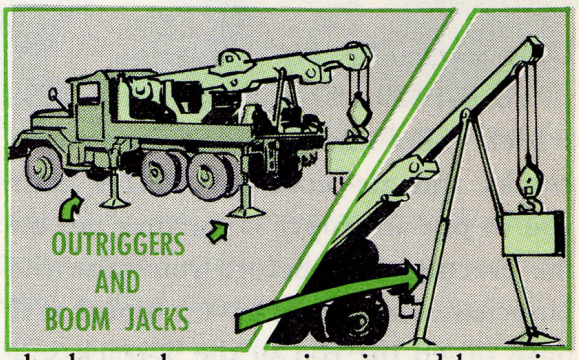
Dear Mr. E. A. A.,

The answer is NO, as the **right** data plate tells you. But there is a way.

Fig 51 of TM 9-8028 is for the M246. Fig 60 gives the safe-load data for the M62. Change 5 (17 Nov 59) to the TM sets this straight. It's also a good idea to check this against data plates on the vehicle to make sure they're right.

Your M62 data plate tells you when to use the three-part line. But a three-part line just divides the load between the different parts of the line and helps make the lifting smoother.

No matter how many parts in the line, the boom carries **all** the weight. So . . . you raise the safe load limit for



the boom by retracting it and by using the outriggers and boom jacks.

Make sure you retract the boom and place the outriggers and boom jacks just like the TM and the data plate tell you.

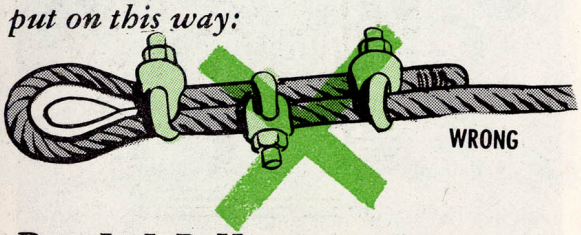
Trying to increase the boom capacity just by adding parts to the line will get you nothing but a busted boom.

Half-Mast

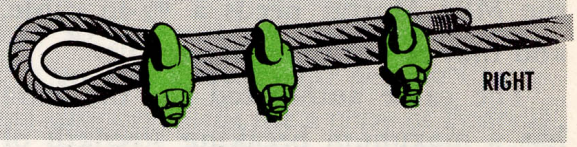
NO SADDLE FOR DEAD HORSES

Dear Half-Mast,

In PS 92 you show some cable clamps put on this way:



TM 5-725 says to do it this way:



So what gives, please?

1st Lt J. P. H.

Dear Lt J. P. H.,

The TM is absolutely right. Clamps should be put on this way because they give more holding power.

I . . . uh . . . er . . . goofed in PS 92. You never put the saddle (U-bolt clip) over a dead horse (short end of cable).

Half-Mast

HERCULES, TOO

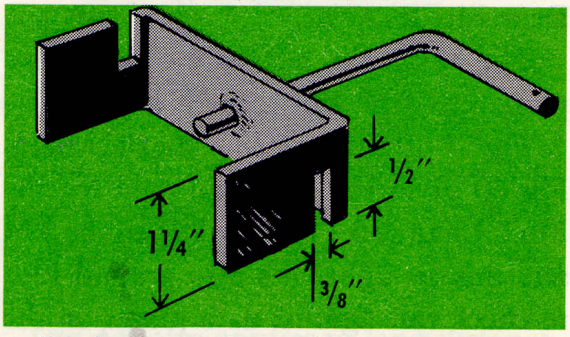
Dear Half-Mast,

In PS issue 86 you showed how to make a tool that could be used when you want to raise the Nike-Ajax launcher without a missile aboard. What do you think of using the tool on our Hercules launchers?

MSgt S. L.

Dear Sergeant S. L.,

TB 9-1440-250-20/7 (26 Apr 60), which talks about hydraulic-system checks and air-bleed procedures, tells you to put an empty launching rail on the erecting arm before you raise the launcher. But, if you have a tool that'll push down the rod in the T-track so's you don't have to use the launching rail . . . then you're in good shape. And the tool in issue 86 will do the job on the Hercules.



Make sure you tie a red flag or streamer—12 inches is a good length—to the handle to remind you the tool's on the track.

Half-Mast

CABLES DIFFERENT

Dear Half-Mast,

What is the difference between the ramp door hoisting cables for the M59 Armored Personnel Carrier and the M84, 4.2 inch, Self-Propelled Mortar? And can you interchange them?

CWO J. W. S.

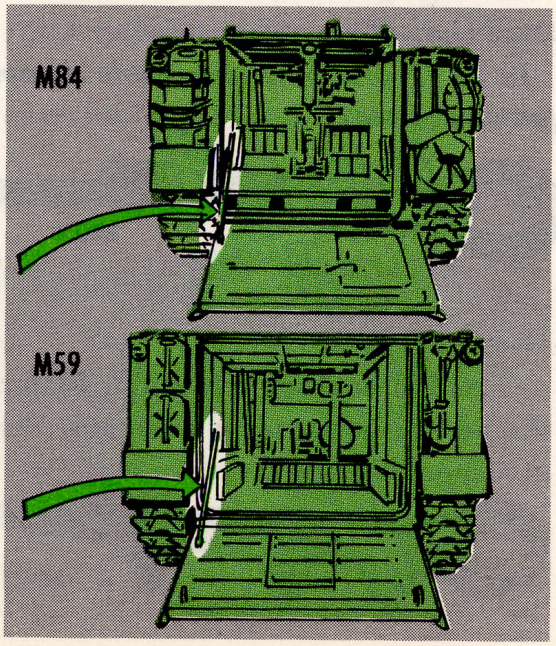
Dear CWO J. W. S.,

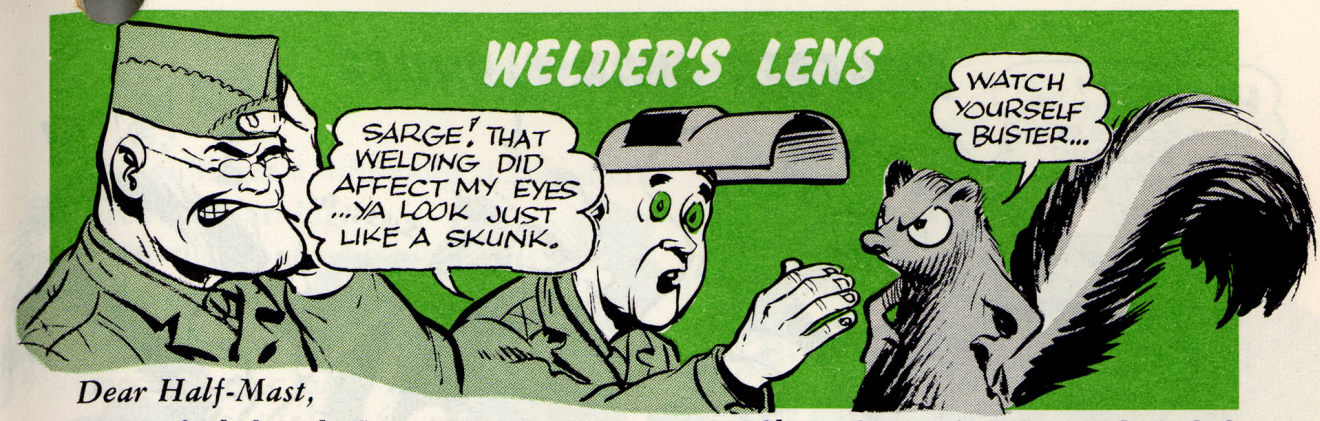
The M59 APC takes a 3/8-in cable, the M84 Mortar needs a 1/2-in cable, and they're not interchangeable.

The cable authorized for the M84 has a maximum breaking strength of 22,800 pounds and goes by the name of Linkage, (cable) flexible, ramp door hoisting, FSN 2540-592-6604.

For the M59 you need Cable assembly, ramp door hoisting, FSN 2540-032-2881. Its maximum breaking strength is 14,400—not heavy enough to handle the M84.

Half-Mast





Dear Half-Mast,

We find that the lens (FSN 4240-273-8590, Chem Corps) for the welder's helmet doesn't always give good eye protection.

We've used some of these lenses that worked fine, but on a recent electric welding job, two welders suffered severe burning of the eyes. They had to make a a quick trip to the dispensary, and the medics pulled them off the welding job.

Apparently this lens is OK for some people, but not strong enough for others.

Can you tell us why units aren't supplied with several shades of eye shields for the welder's helmet?

MSgt H. S. F.

Dear MSgt H. S. F.,

The helmet lens your outfit's using is shade Number 10. It's OK only for welding and cutting jobs using from 75 amps to 200 amps.

For jobs using more than 200 amps, welders must use lens shade Number 12, 13 or 14. Lens Number 12 (FSN 4240-273-8591, Chem Corps) is available in supply. And your supply support outfit can order the darker lens (shades Number 13 and 14) on local purchase from the helmet manufacturer.

In case your shop doesn't have TM 9-237, "Welding Theory and Application" (19 Oct 58) might be a good idea to ask your publications people to get a copy so you welders can have it.

Also, check with your nearest Chemical support outfit for a copy of Federal Specification GGG-H-211a (9 Feb 55). This'll tell you which shade of lens to use with the different strengths of light you get from different arcs.

Why bet on the long shots when you can bet on a sure thing? And that would be a long shot if you took your M7A1-6 flame thrower mechanized, main armament turret-mounted on a mission without weighing your muzzle fire extinguisher.

Could be that you wouldn't need a full extinguisher but it's a sure thing when you check it before you go and make sure there's enough carbon dioxide to snuff the flame.

The empty and full weights are stamped on the valve body so you can tell by weighing the extinguisher just how much carbon dioxide's left. TM 3-1040-206-10 says there are about 125 half-second bursts in a full extinguisher. So if, for example, the extinguisher is half full, you have half as many bursts left—about 60.

WHIPPING HOSE

You'll get a whipping if you don't heed the warning.

No there's no whipping posts around these days but the secondary fuel vent hose of your M7A1-6 flame thrower mechanized, main armament turret-mounted will do the job.

When the pressure in the secondary fuel system is being vented, have your helper get a good grip on the vent hose (outside the turret) or it'll go jumping around, and if your buddy's in its path he'll get a lashing.

So to keep from picking up some teeth get somebody to hang on to the hose tight before you vent the containers.

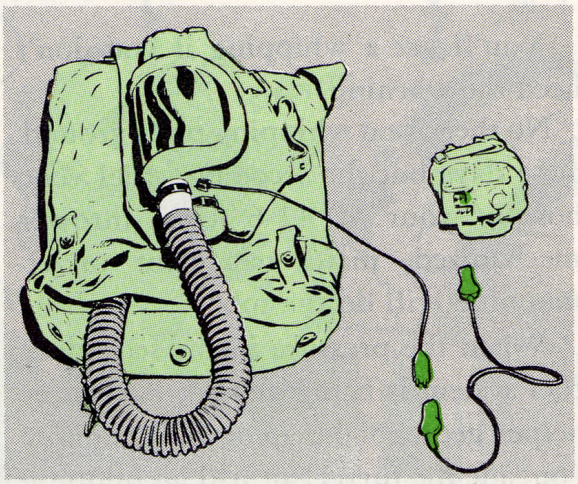
Keep commercial cylinders away from the compressor on your M4 service unit. She's too powerful for them now.

Change 2 to MWO 3-361-45/1 (18 Dec 59) boosted the compressor's pressure delivery rate from 2,200 PSI to 3,000 PSI. And most commercial cylinders, as you well know, are rated from 2,000 to 2,200 PSI.

So pass the word along, pronto:The M4's compressor is OK for pressurizing mechanized flame throwers. Nix on using her for charging commercial cylinders.

Something else you can do is pack up your M4's commercial cylinder filling-line assembly (FSN 1040-294-3077). Mark it "DO NOT USE", and turn in as excess.

MASK MIKE-PLUG



Your M14 protective mask (FSN 4240-200-0765) must have a female connector plug on its microphone cord.

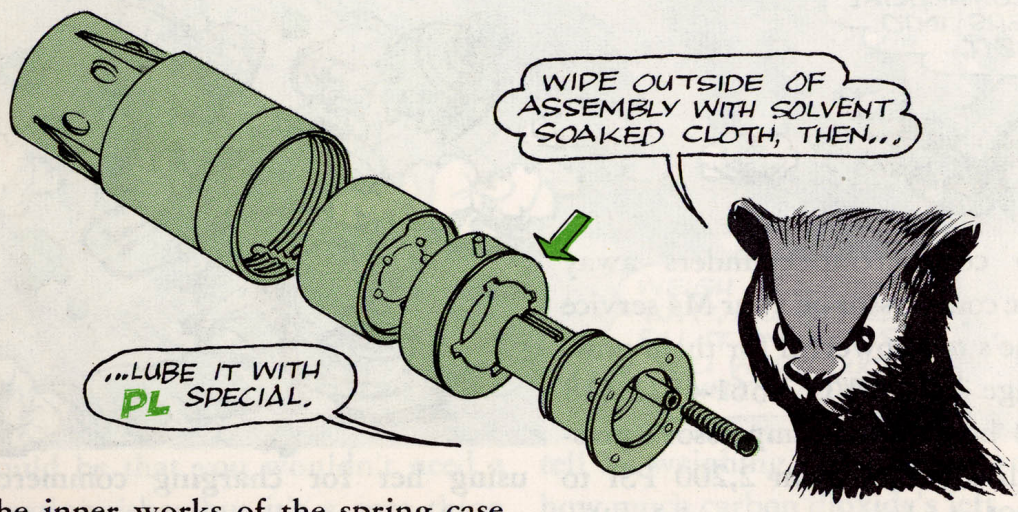
Take a quick look at your M14 right now . . . if the mike cord has a **male** connector plug let your Signal support unit know about it right away. They'll fix it up with a female plug. That's what your M14 needs so's the mike can be plugged into a combat vehicle's inter-com system.

If your Signal support outfit isn't handy, any first class mechanic can get an OK to perform this simple surgery on the cord. The female plug the cord needs is FSN 5936-636-6602 (Sig).

Only a few M14's got out with male plugs, but check yours right now and be sure yours is OK. Later production masks have the female plug.

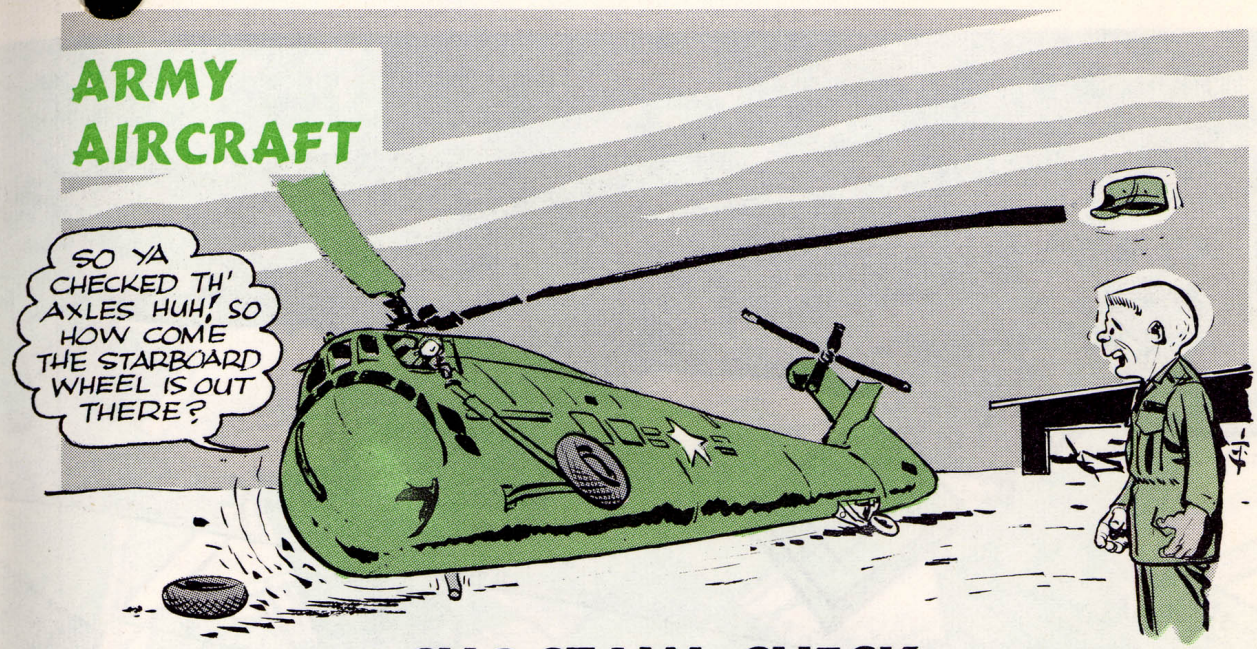
M2A1 PORTABLE FLAME THROWER

You're bound to run into trouble sooner or later if you soak or wash the spring case assembly of your M2A1 or M2A1-7 portable flame thrower in solvent.



The inner works of the spring case assembly are coated with a special preservative oil which gets dissolved when you dunk the assembly in solvent. Next you get rust in the assembly—and it's had it.

When you want to clean the assembly you wipe the outside with a cloth that's been soaked with solvent. But remember you lube it with PL special after you've cleaned it.

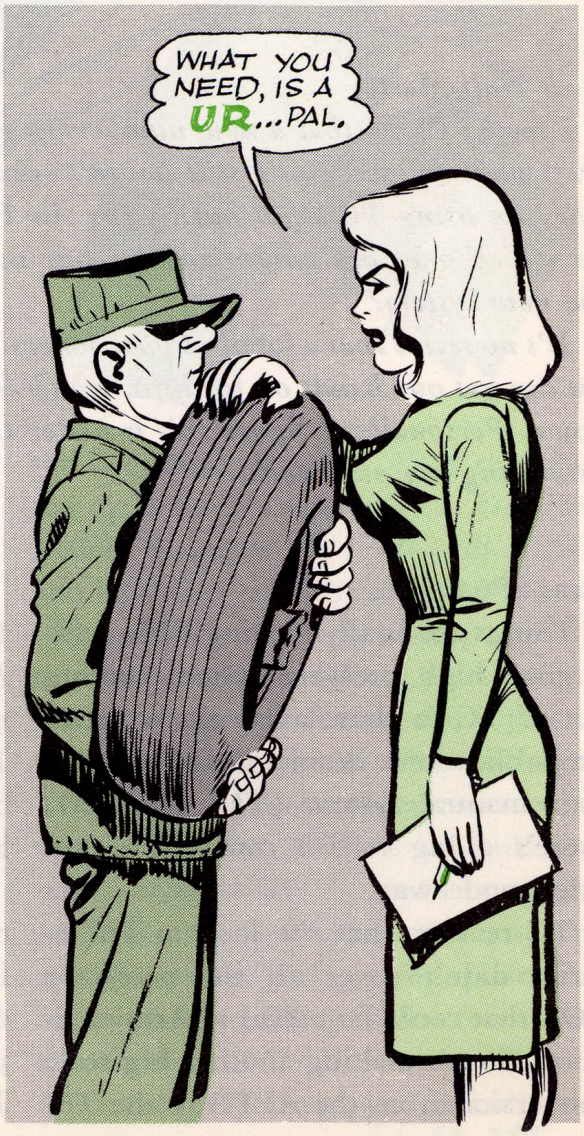


CHOCTAW CHECK

Heard about that inspection of Choctaw (H-34) main landing gear axles yet? TMC message TCMAC-EH-34-02-00708 went out worldwide asking everybody with one of these birds to make a magnaflux inspection of the axles (P/N S1625-50122) as a one-shot deal.

So come next periodic, pull both the left and right axles, like the -2 says, and replace any bad ones. For every bad axle you find, there's supposed to be a UR (DA Form 1275) on its way to the engineering people "in memory of."

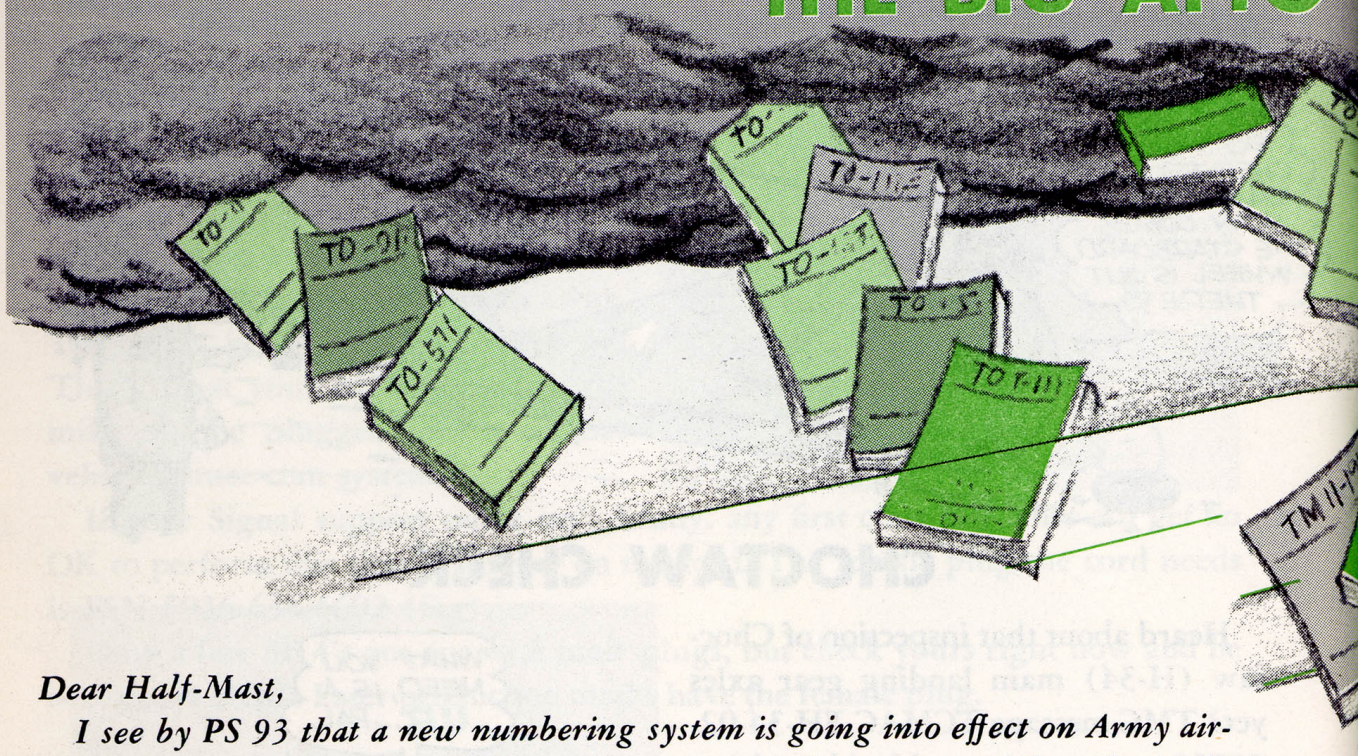
"TMC Message, TCMAC-EH-34-02-00708 told you when to do it and how. TMC Message, TCMAC-EH-34-02-01020 gave you additional instruction on how to carry out the inspection more thoroughly together with added information for a one time shot. So, if your Form DD 829 does not show you have complied, Do It, Now!"



DON'T FORGET THE UR!

CHECK YOUR INDEX FOR . . .

THE BIG AFTO



Dear Half-Mast,

I see by PS 93 that a new numbering system is going into effect on Army aircraft publications. But I still haven't seen any of them. Meanwhile, what's the story on using TO's put out by the Air Force? Is there going to be a list put out on which ones are authorized for our use and how can I identify them under the new system?

It's no secret that a lot of us poor jokers out here in the field are using whatever we can get our hands on for info, which leaves us wide open for a good dressing down. Personally, I figure this is better than endangering someone else's life by protecting my own neck.

SP6 E.C.S.

Dear SP6 E.C.S.,

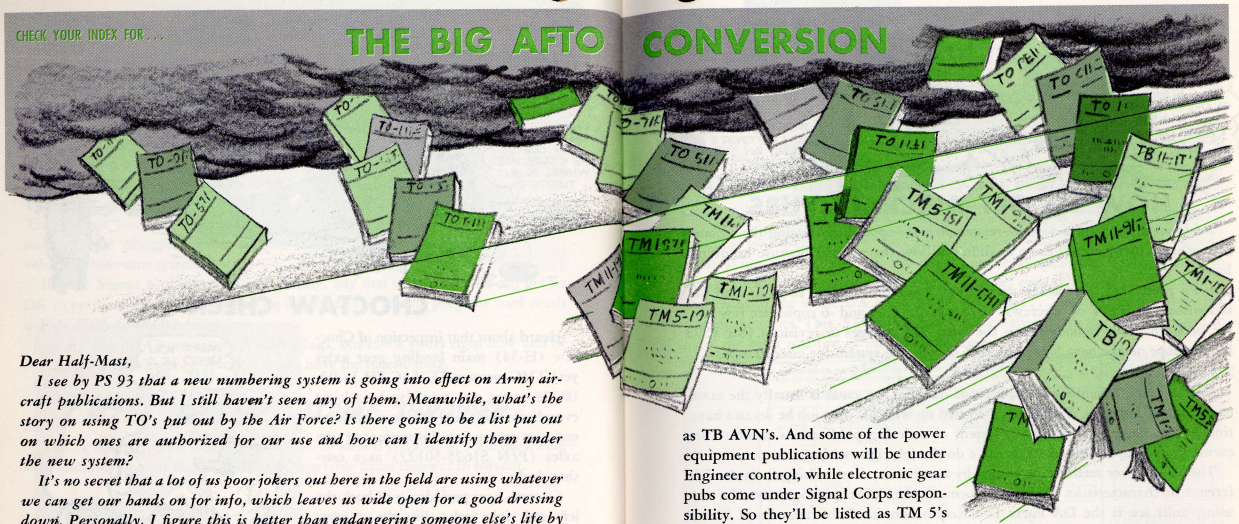
Things are finally turning VFR, with a good high pressure system coming out of TC to chase away the overcast on publications. Besides the new multi-part manual system (TM 55-series), there's a big AFTO conversion program underway.

TC realizes that the interim TM 1-series didn't cover all the necessary TO's that could be useful to Army aviation. So it's making another big scale conversion from the AFTO to the TM 1-series. Since putting them into the Army publication system as multi-part manuals would mean rewriting the TO's, TC's hustling up the conversion by sticking to the interim TM-1 numbering system.

For you, this means less trouble identifying them, because they'll show up in the Army index with a TM 1 in front of the AF number. Of course, the subjects that cover more than one item of TC air equipment may also show up

CHECK YOUR INDEX FOR...

THE BIG AFTO CONVERSION



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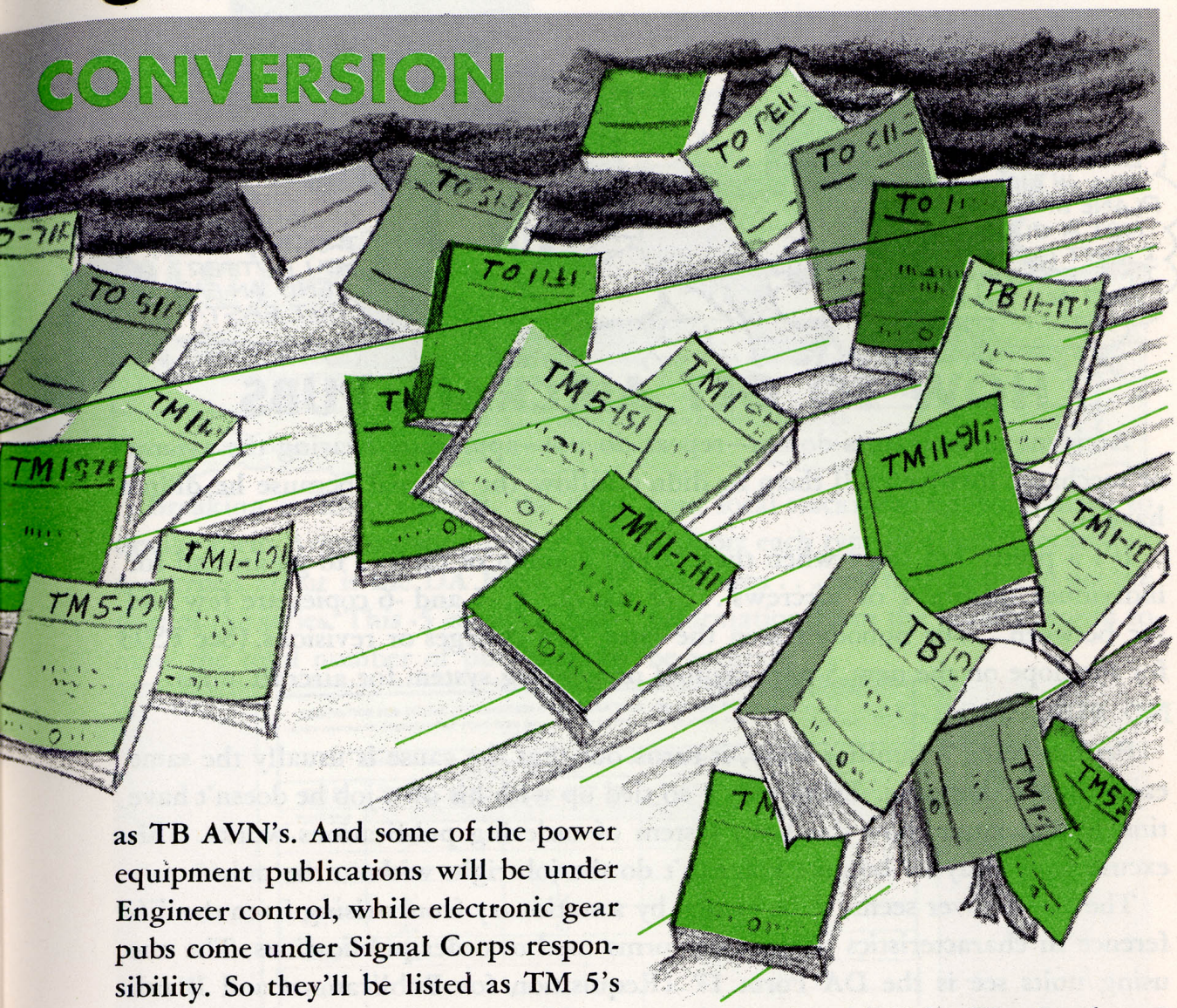
Those AFTO's being converted by the other tech services will be changed over directly to the multi-part numbering system. But the interim TM 1's used for the component handbooks and time compliances won't become TM 55's and MWO 55's immediately. Eventually, the TB AVN's will be superseded by TB 55's.

Could be that AFTO you always wanted permission to follow is already printed up as a TM 1-series pub and you don't know it—because this quick deal conversion has been going on since the beginning of 1960. They're showing up in bunches in the latest DA Pam 310-4, "Index of TM's, TB's, SB's, LO's and MWO's," and its changes.

An even quicker way to keep up with them is to ask your local publications stock room people for regular copies of the AG Publication Center bulletins. They make a good cross reference with the 310-4 index, because the bulletins are put out **weekly** . . . and it says right at the top of the bulletin that you can ask the outfit making out your DA Form 12-series (Requisition for Initial Distribution of Publications and Blank Forms) to get you a copy of the bulletins.

Half-Mast



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Half-Mast

DA FORMS 17 AND 12-5...

TOGETHER

HOW TO GET AIRCRAFT PUBS

Accident investigators do not—repeat **do not**—appreciate hearing the aviator or mechanic involved tell them he didn't follow the manual because he didn't have it.

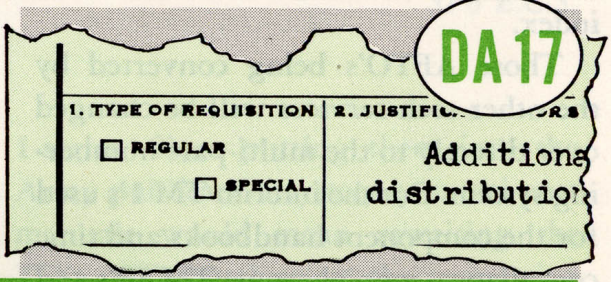
It's a pretty sad story when there aren't enough of each -1 to go around for individual members of aircrews . . . or the -2, -4, -5 and -6 copies are few and far between . . . or nobody's seen the latest TM changes or revisions. (See PS93 for the dope on the new 5-part manual numbering system for aircraft pubs.

NO PUB . . NO GO—

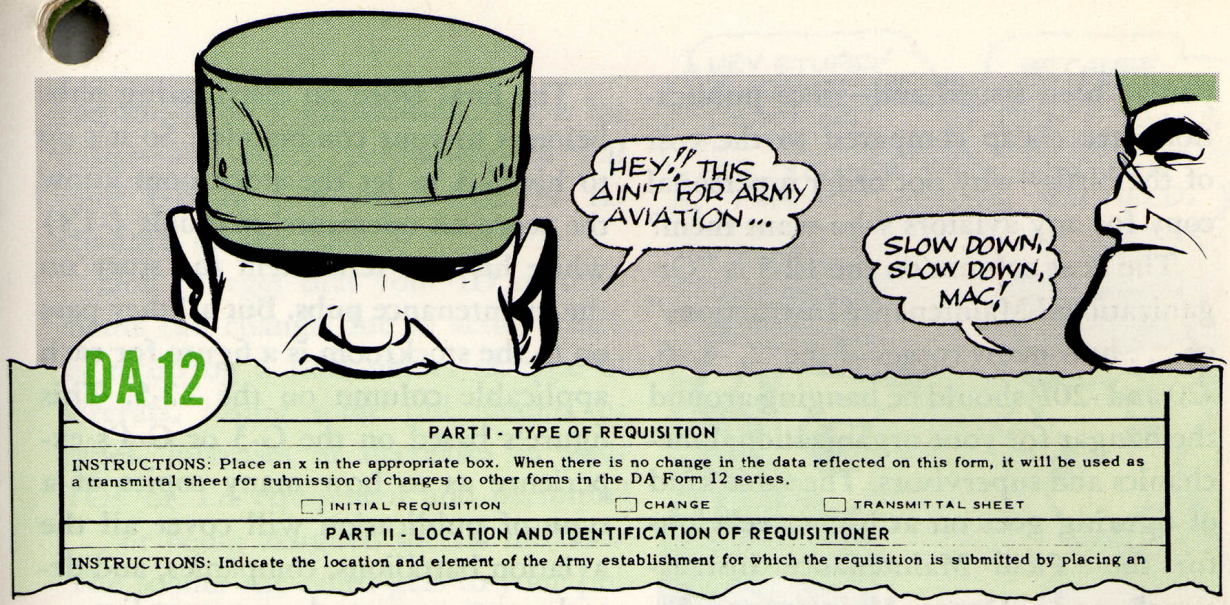
Besides being a familiar story, it turns out that the cause is usually the same each time it happens. Everybody's so tied up with his own job he doesn't have time to understand how the Army system of ordering publications works. This excuse won't buy it—because you can't do the job right without the pubs.

The cloud cover seems to be caused by a stationary front arising from the difference in characteristics of the two forms used to order publications. The one using units see is the DA Form 17 (Requisition for Publications and Blank Forms). It's only used for **regular** and **special** types of requisitions.

Besides the DA 17, publications stockroom people also use the DA Form 12-series (Requisition for Initial Distribution of Publications and Blank Forms). This series is used for **initial** and **change** types of requisitions.



The big difference between the two is that the DA Form 17 lists the specific publications needed, while the DA Form 12-series establishes a quantity for each type and category of military publication.



Breaking it down further, the particular form Army aviation people are concerned about is the DA Form 12-5 part of the series. This -5 is used to estimate the total number of publications your local stockroom figures it needs to support each type of aircraft located in your area . . . and they've got to get the information from the horse's mouth to be accurate.

REQUISITION FOR INITIAL DISTRIBUTION OF PUBLICATIONS AND BLANK FORMS
(ARMY AIRCRAFT PUBLICATIONS FURNISHED IN QUANTITY DETERMINED BY USING AGENCY)
(AR 310-2)

TYPE OF REQUISITION: ☐ INITIAL ☒ CHANGE

DA12-5

INSTRUCTIONS: Enter in the appropriate column opposite the aircraft designation, the total quantity required for that type aircraft.

TYPE OF AIRCRAFT	OPERATORS' AND CREW MEMBERS' INSTRUCTIONS	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS	FIELD MAINTENANCE INSTRUCTIONS	DEPOT MAINTENANCE INSTRUCTIONS
FIXED WING				
L-19	182	86	23	
L-20	148	51	15	
L-23 C	41	11	5	
U-1A	102	43	12	
L-23D	68	21	7	
L-23F	5	2	4	
AO-1	8	3	1	
ROTOR WING				
H-13G	256	112	38	
H-19	212	64	29	
H-21	168	75	18	
H-23	12	4	2	
H-34	78	24	8	
H-37	16	9	3	
HU-1A	6	1	1	
HU-1B	1	1	1	
H-13H	58	18	5	

DA FORM 1 APR 58 12-5 EDITION OF 1 SEP 58 IS OBSOLETE. GPO 920335

BY ECHELONS—

The form is further broken down by maintenance echelons. So when it comes to filling in the "Operators' and Crew Members' Instructions" column on the 12-5, let them know through command channels how many of each -1 (or -10 in the new numbering system) you need to cover each type of aircraft

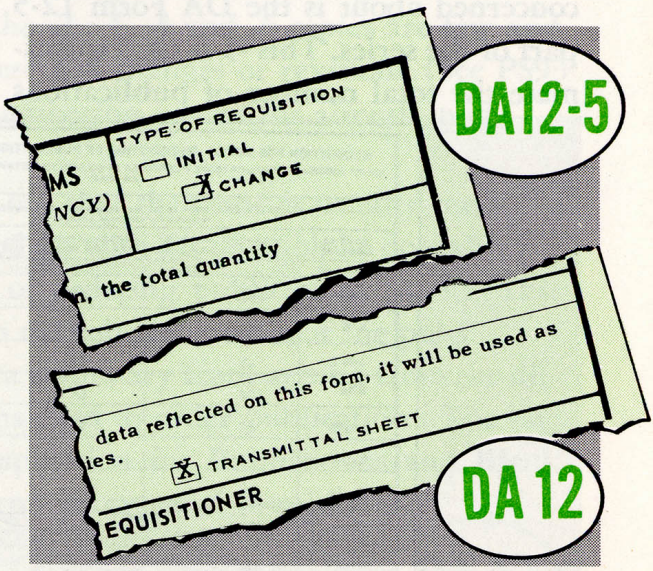
you've been issued and—since publications are cheap compared to the cost of the birds—why not order a personal copy for any aviators who want them?

The next column on the 12-5 is "Organizational Maintenance Instructions" or . . . how many copies of the -2, -4, -6, -20 and -20P should be hanging around the hangar for your organizational mechanics and supervisors. The same kind of figuring goes on at higher echelons for the "Field Maintenance Instructions" and "Depot Maintenance Instructions" columns.

The final word on distributing pubs belongs to your commander. So it's up to his G-3 to let the stockroom know the score on operators' manuals (-1's) while his G-4 tells them the story on the maintenance pubs. But all they pass on to the stockroom is a figure for each applicable column on the 12-5. This figure's based on the G-3 or G-4's experience as to how many copies of a type of publication will cover all the aviation battalions, companies, and detachments your stockroom supplies . . . together with what you tell them.

ON TO THE DEPOT—

Then the 12-5 goes up to the AG pubs depot to advise those people how to set up initial distribution to your pub stockroom . . . or when to change it. A change is real simple. The local stockroom just makes out a new 12-5 and attaches it to the basic DA Form 12, which is used as the transmittal or cover sheet.



With the right figures on the 12-5, there should usually be enough pubs sent down to your stockroom for automatic initial distribution to all units. But if you don't get enough of a particular new pub to fill your entire requirement, then you have to order more from your stockroom on a DA 17. That forces the stockroom to go back to the depot with a DA 17 of its own.

ORDER PLENTY—

Actually, this procedure is a waste of time, because enough copies listed in the proper column on the 12-5 will make sure you get enough to go around the first time, along with the other aviation outfits being supplied out of your stockroom. Then you and your stockroom will be able to cut down use of the DA 17 to mostly ordering replacements on pubs and blank forms that have been lost, worn out or used up.

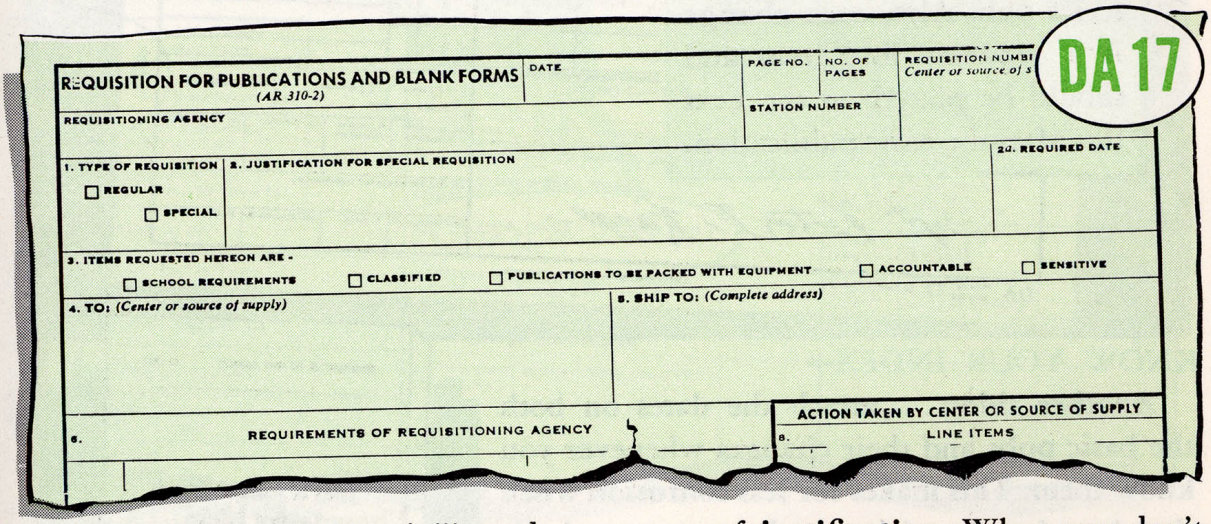
Instead of using a DA 17 to tell your stockroom you're getting too little or

too much of a publication, it's a lot easier—and more permanent—to tell your G-3 or G-4 you'd like the ID changed on the 12-5.

Don't forget that your ID requirements can change due to actions such as receiving a new model or type of aircraft, losing some old models or types, increases or decreases in your TOE or TA equipment and personnel . . . or being assigned special missions. The sooner the word gets to your pub stockroom, the sooner the 12-5 can be changed.

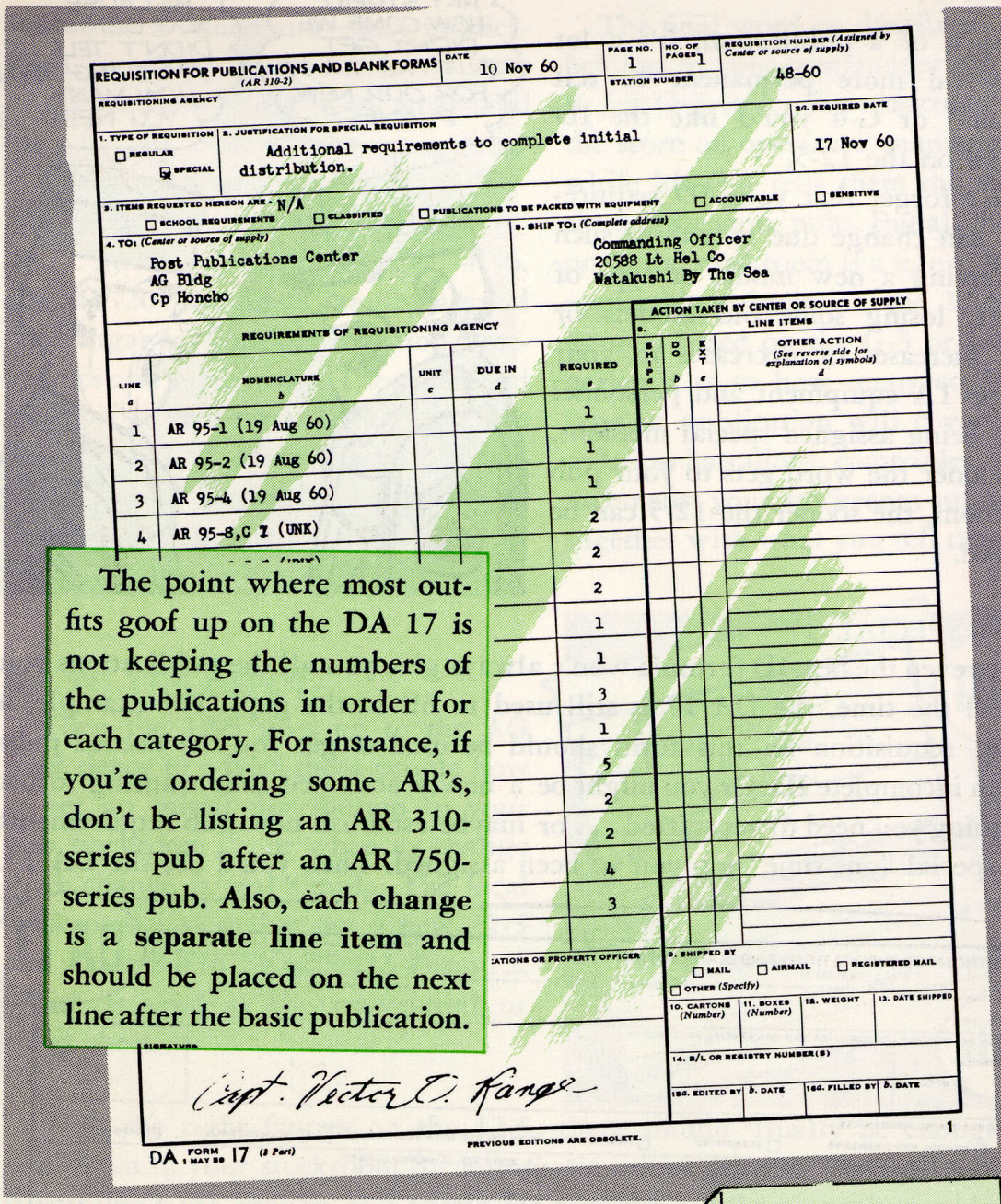
YOUR SPECIAL 17—

Since even the best ID formula won't always give you all the publications you need all the time, the DA 17 is still used to fill in the gaps. For example, a **Special** requisition on this form should be used to get you the needed pubs after an incomplete ID. Or you might be a newly activated unit wanting to list everything you need to get started . . . or maybe establish new pub requirements for a special "one-time" job you've been assigned. Then you'd use the DA 17.


REQUISITION FOR PUBLICATIONS AND BLANK FORMS (AR 310-2)
DATE
PAGE NO.
NO. OF PAGES
REQUISITION NUMBER Center or source of s
DA 17
REQUISITIONING AGENCY
STATION NUMBER
1. TYPE OF REQUISITION
☐ REGULAR
☐ SPECIAL
2. JUSTIFICATION FOR SPECIAL REQUISITION
2d. REQUIRED DATE
3. ITEMS REQUESTED HEREON ARE -
☐ SCHOOL REQUIREMENTS
☐ CLASSIFIED
☐ PUBLICATIONS TO BE PACKED WITH EQUIPMENT
☐ ACCOUNTABLE
☐ SENSITIVE
4. TO: (Center or source of supply)
5. SHIP TO: (Complete address)
6. REQUIREMENTS OF REQUISITIONING AGENCY
ACTION TAKEN BY CENTER OR SOURCE OF SUPPLY
8. LINE ITEMS

Of course, every "Special" needs some sort of **justification**. When you don't think any of the reasons mentioned so far are the right ones, check AR 310-2 (1 Apr 59) for a guide. Para 35 defines a "needed" pub and para 40 explains both the **standard** and **alphabet** distribution formulas you find at the tail end of general and administrative type pubs.

Naturally, no DA 17 is going to do the job correctly unless you pay attention to the instructions on the back.



REQUISITION FOR PUBLICATIONS AND BLANK FORMS (AR 310-2)

DATE: 10 Nov 60 | PAGE NO. 1 | NO. OF PAGES 1 | REQUISITION NUMBER (Assigned by Center or source of supply): 48-60

REQUISITIONING AGENCY | STATION NUMBER

1. TYPE OF REQUISITION: ☐ REGULAR ☒ SPECIAL

2. JUSTIFICATION FOR SPECIAL REQUISITION: Additional requirements to complete initial distribution.

2a. REQUIRED DATE: 17 Nov 60

3. ITEMS REQUESTED HEREON ARE - N/A: ☐ SCHOOL REQUIREMENTS ☐ CLASSIFIED ☐ PUBLICATIONS TO BE PACKED WITH EQUIPMENT ☐ ACCOUNTABLE ☐ SENSITIVE

4. TO: (Center or source of supply)
Post Publications Center
AG Bldg
Cp Honcho

5. SHIP TO: (Complete address)
Commanding Officer
20588 Lt Hel Co
Watakushi By The Sea

REQUIREMENTS OF REQUISITIONING AGENCY

LINE a	NOMENCLATURE b	UNIT c	DUE IN d	REQUIRED e
1	AR 95-1 (19 Aug 60)			1
2	AR 95-2 (19 Aug 60)			1
3	AR 95-4 (19 Aug 60)			1
4	AR 95-8,C 2 (UNK)			2
				2
				2
				1
				1
				3
				1
				5
				2
				2
				4
				3

ACTION TAKEN BY CENTER OR SOURCE OF SUPPLY

8. LINE ITEMS

SHIPS a	DO b	EXT c	OTHER ACTION (See reverse side for explanation of symbols) d

ATIONS OR PROPERTY OFFICER

9. SHIPPED BY: ☐ MAIL ☐ AIRMAIL ☐ REGISTERED MAIL ☐ OTHER (Specify)

10. CARTONS (Number)	11. BOXES (Number)	12. WEIGHT	13. DATE SHIPPED

14. B/L OR REGISTRY NUMBER(S)

15a. EDITED BY	b. DATE	16a. FILLED BY	b. DATE

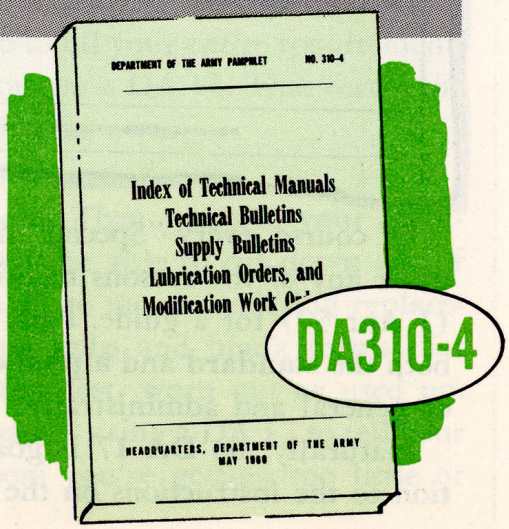
SIGNATURE
Capt. Victor E. Kange

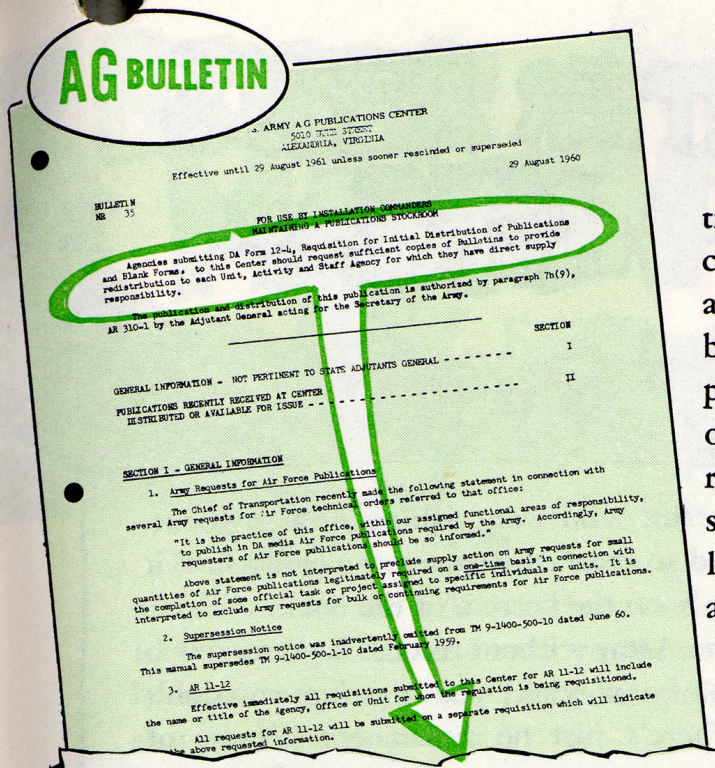
DA FORM 1 MAY 60 17 (3 Part) PREVIOUS EDITIONS ARE OBSOLETE. 1

The point where most outfits goof up on the DA 17 is not keeping the numbers of the publications in order for each category. For instance, if you're ordering some AR's, don't be listing an AR 310-series pub after an AR 750-series pub. Also, each change is a separate line item and should be placed on the next line after the basic publication.

KNOW YOUR INDEX—

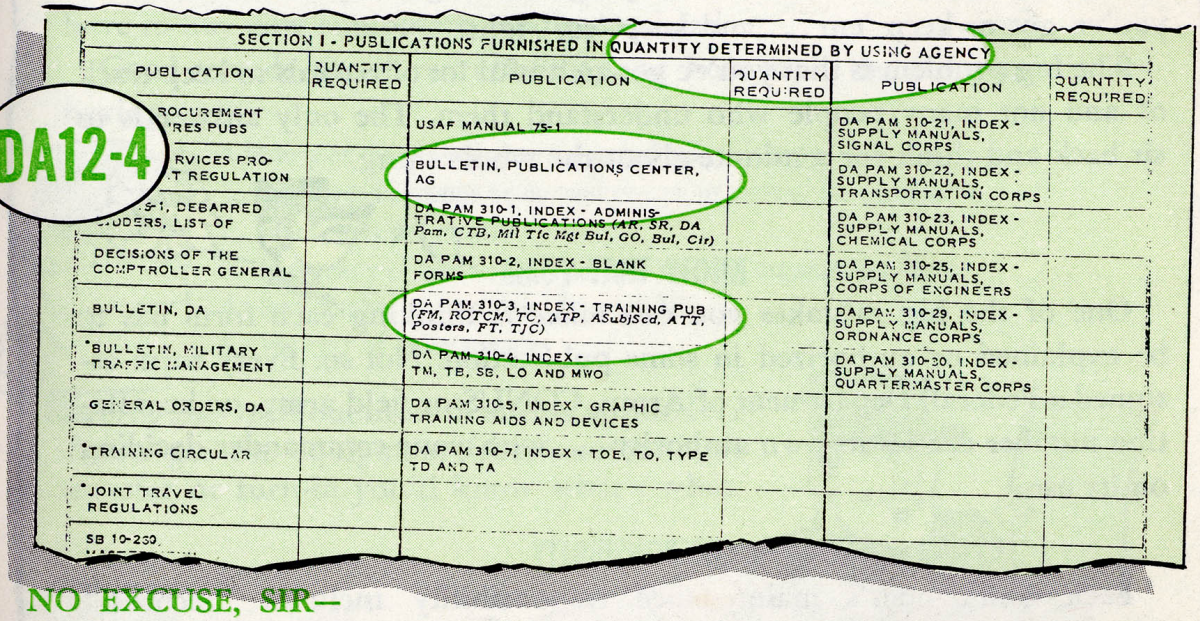
Another thing . . . attach the dates on both the basic pubs and their changes whenever you know them. This makes for less confusion when there're a lot of revisions and changes to a basic publication. The latest date on a publication is in the DA Pamphlet 310-series index for each group of pubs. The big one for all your handbooks and the new multi-part manuals is DA Pam 310-4, "Index of TM's, TB's, SB's, LO's and MWO's."





If you get left behind the door every time a new index or one of its changes comes out, ask your local stockroom about the regular weekly information bulletins each AG Publications Center puts out. The bulletins list **all** the new or revised Army publications which are ready for distribution that week. Your stockroom can requisition enough bulletins on its own DA Form 12-4 to pass around to the units it supplies.

Agencies submitting DA Form 12-4, Requisition for Initial Distribution of Publications and Blank Forms, to this Center should request sufficient copies of Bulletins to provide redistribution to each Unit, Activity and Staff Agency for which they have direct supply responsibility.



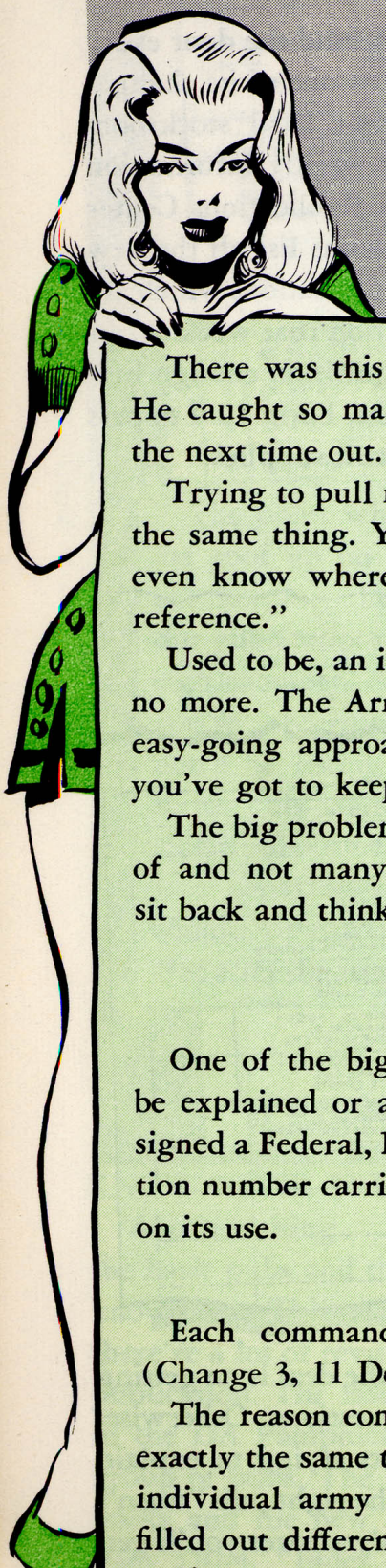
NO EXCUSE, SIR—

By this time you're either beginning to understand what the deal is on getting your share of aircraft pubs—or else you're going to ask questions. Otherwise, your outfit's gonna be busier than a bucketfull of red ants trying to explain how come nobody's to blame for that "accident" because the right pub "wasn't handy." The military definition of "responsibility" is the only answer you'll get.

One thing nice about pubs . . . they're all expendable. So requisition away when the ID lets you down. Wilco?

GOTTA HAVE 'EM—

BETTER RECORDS MAKE ...



There was this bright young recruit who went fishing in a rowboat. He caught so many fish he decided to mark the spot so he could find it the next time out. So he made a big X on the bottom of the boat.

Trying to pull maintenance in the Army without records is pretty much the same thing. You not only don't know where you're going, you don't even know where you've been. There's just no permanent "frame of reference."

Used to be, an informal type record here and there would do it . . . but no more. The Army's become too mechanized and complicated for the easy-going approach to record keeping. No longer any choice about it—you've got to keep 'em . . . and keep 'em right!

The big problem is that you've got an awful lot of records to keep track of and not many people who understand them. The only answer is to sit back and think for a minute about the whole thing.

KNOW THAT FORM

One of the big mistakes you can make is thinking each form has to be explained or authorized in some publication. Not so. Every form assigned a Federal, Department of Army, CONUS or field army, or installation number carries its own authority . . . with your commander deciding on its use.

RESPONSIBILITY

Each commander's maintenance responsibility includes "records." (Change 3, 11 Dec 58, to AR 750-5).

The reason commanders have the last word is that conditions are never exactly the same throughout the entire Army, within a large command or individual army area, or even from one post to another. So forms are filled out differently in some cases to fit local maintenance needs.

If you're not sure exactly why a certain form is used you can't be sure you're filling it out right, true? True! OK . . . then listen carefully.

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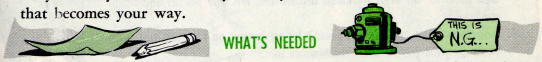
BETTER MAINTENANCE

STANDARDIZATION

If nothing's been written on a particular form, lower echelon commanders carry the ball. In other words, without a regulation, directive, local SOP, bulletin or memo, you're on your own. See your C O. If somebody above you doesn't like your way, he'll write up his way . . . and that becomes your way.



WHAT'S NEEDED

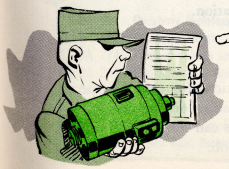
Without a written guide, just remember that records should show information on the **condition** of your equipment . . . so the people who have to buy new equipment can figure ahead.

Good records also show **reliability**, or how well the equipment's behaving.

A history of the **maintenance needed** tells the Army:

1. If it needs to change equipment design, or parts of the equipment.
2. What tools are needed.
3. How many of which repair parts to stock at organization level.
4. Best number of mechanics for each TOE.
5. The cost of maintenance.

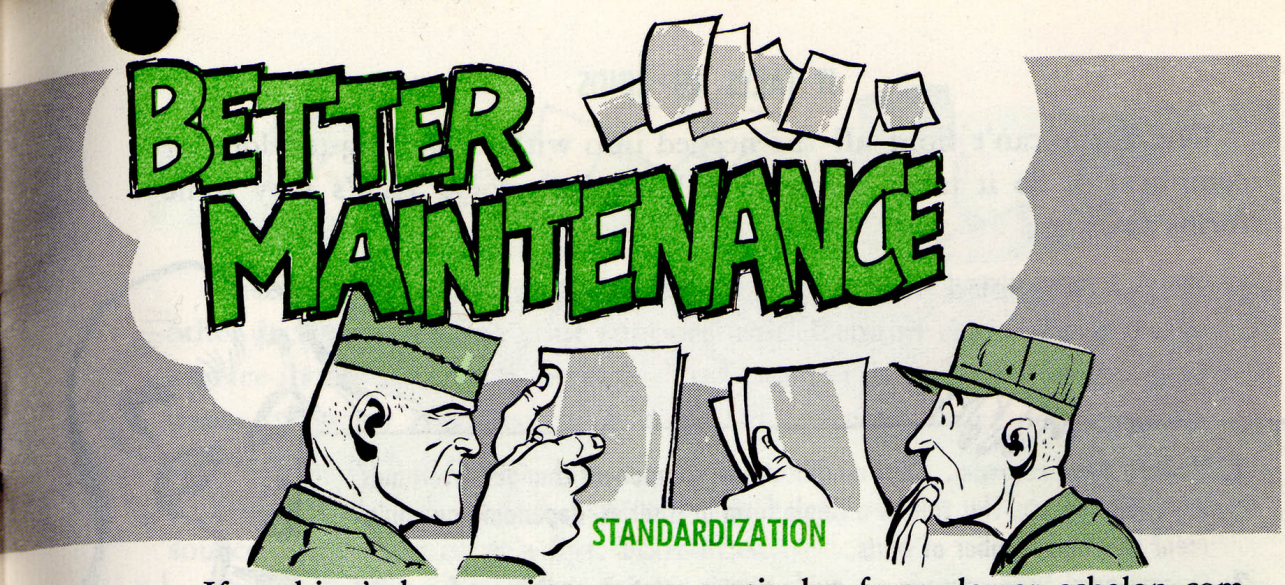
Records also spell out **modifications applied** . . . so if you get the equipment from another unit on transfer or turn-in you'll know what's what.



ACCURATE AND CURRENT

Inaccurate records are a waste of time . . . they don't give the information they're supposed to and may cause more harm than good.

BETTER MAINTENANCE



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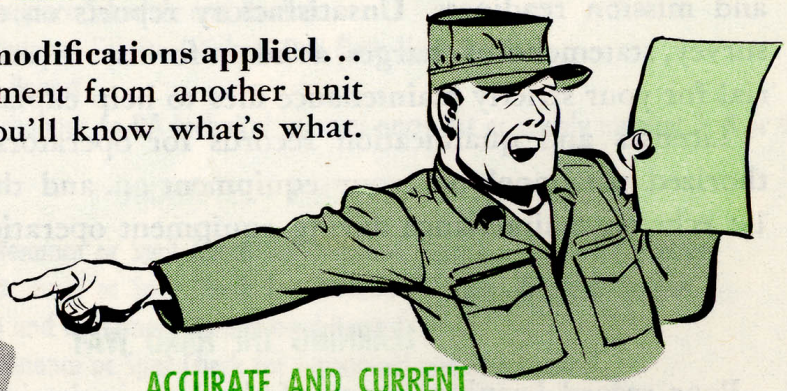

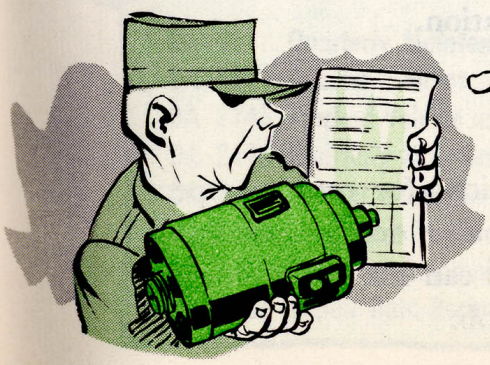

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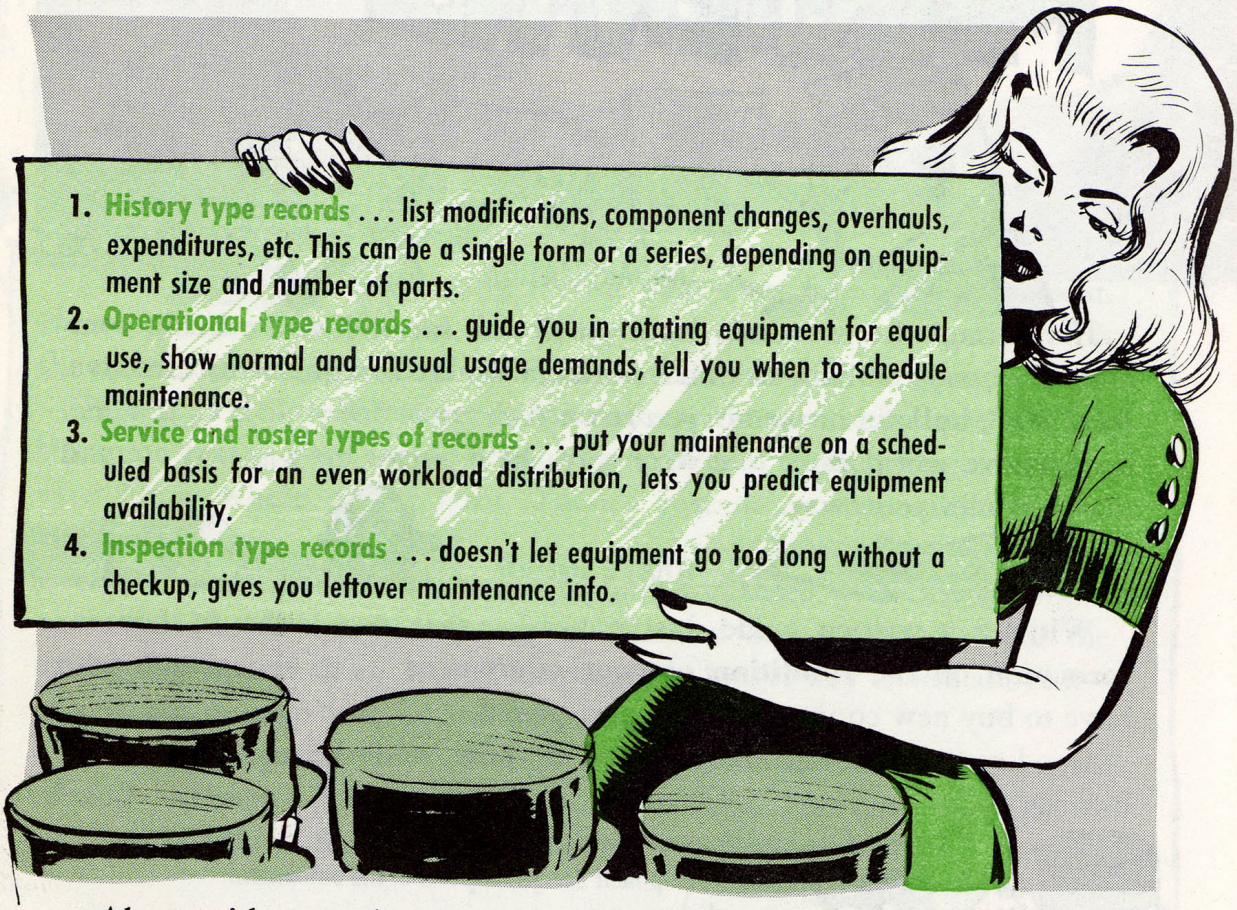
IT TAKES ALL KINDS

One form can't hold **all** the needed info without getting too long or complicated. So it takes a few to tell the full story. That's why some forms are:



1. **History type records** . . . list modifications, component changes, overhauls, expenditures, etc. This can be a single form or a series, depending on equipment size and number of parts.
2. **Operational type records** . . . guide you in rotating equipment for equal use, show normal and unusual usage demands, tell you when to schedule maintenance.
3. **Service and roster types of records** . . . put your maintenance on a scheduled basis for an even workload distribution, lets you predict equipment availability.
4. **Inspection type records** . . . doesn't let equipment go too long without a checkup, gives you leftover maintenance info.

Along with operational type records, but less directly connected with maintenance, there're plenty of **associated** types. For example, parts records show you how your supply situation affects your maintenance and mission readiness. Unsatisfactory reports on equipment, reports of survey, statements of charges, accident forms, etc., are cross-reference material for your strictly maintenance files to help explain unusual situations.

Licenses and qualification records for operators prove that only authorized personnel use your equipment . . . and they're responsible for 1st echelon maintenance during equipment operation.

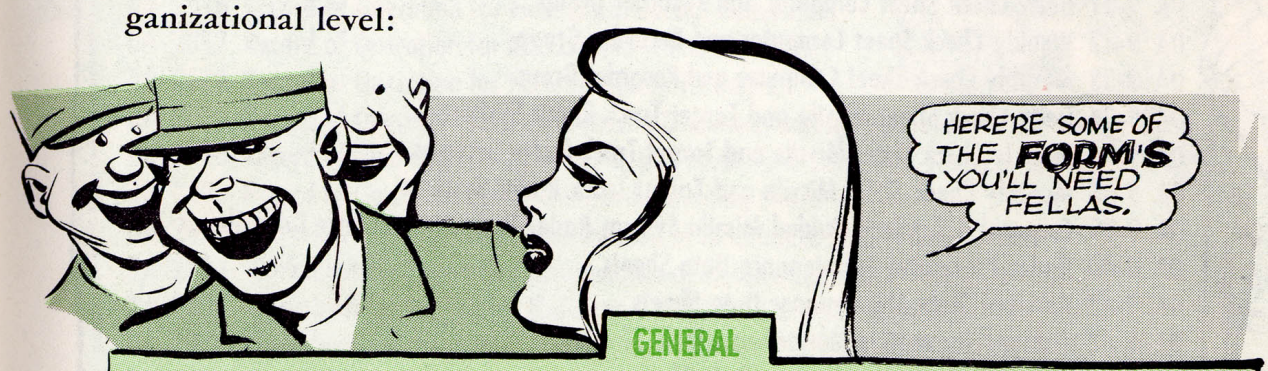
LEARNING THE HARD WAY

Poor record keeping is one of the best invitations for return inspections. But inspectors can also be helpful. If you're doing something wrong, you'll get gigged. At the same time, you can ask for a clue on correcting the gig. That's part of the inspector's job.

Since overall Army responsibility for equipment belongs to one or the other tech services, see your support unit. Remind them about the word **service** in the title **tech service.** You can get instruction in the maintenance of forms and records through the technical assistance programs of the various tech services.

Your local G-4, or S-4, through channels, is the maintenance policy source. And then there's Sgt. Half-Mast.

Here's the list of **maintenance** and some **associated** forms used at organizational level:



GENERAL

DA 55-169 Daily Dispatching Record of Motor Vehicles
DA 285 Report of Individual Accident
DA 460 Preventive Maintenance Roster
DA 468 UER (Unsatisfactory Equipment Report)
DA 478 Organizational Equipment File (jacket file)
DA 811 Work Request and Job Order
DD 6 Report of Damaged or Improper Shipment
DD 110 Vehicle and Equipment Operational Record
DD 314 Preventive Maintenance Schedule and Record
DD 317 Preventive Maintenance Service (Sticker—Due Date Next Service)
DD 787 Electronic Failure Report
DA 2028 Recommended changes to DA technical manual parts list or supply manual 7, 8 or 9.

ORDNANCE—VEHICLES

DA 461 Quarterly Maintenance or Spot Check for Wheeled Vehicles—Wheeled Trailers
DA 462 Quarterly Maintenance or Spot Check for Tracked Vehicles—Tracked Trailers
DA 2145 Tracked Vehicle and Equipment Operational Record
DA 2146 Quarterly Maintenance or Spot Check for Armament and Fire Control
DA 2147 Current Work File
DA 2148 Equipment Status and Deadline Report
DA 2170 Notice of Accomplishment of Ordnance Modification Work and Retrofit Order
DA 2206 Repair Data Record of Commercial Design Vehicles

MISSILES

DA 9-27 Nike-Hercules Antiaircraft Guided Missile System Daily Check Sheet Acquisition Radar System
DA 9-28 Weekly Check Sheet Acquisition Radar System
DA 9-29 Monthly Check Sheet Acquisition Radar System
DA 9-31 Daily Check Sheet Computer and Recorder Group
DA 9-32 Weekly Check Sheet Computer and Recorder Group
DA 9-33 Monthly Check Sheet Computer and Recorder Group
DA 9-34 Daily Check Sheet Missile and Target Track Radar Systems
DA 9-35 Weekly Check Sheet Missile and Target Track Radar Systems
DA 9-36 Monthly Check Sheet Missile and Target Track Radar Systems
DA 9-39 Corporal II Artillery Guided Missile System Radar Daily Maintenance Data Sheets
DA 9-40 Radar Preventive Maintenance Data Sheets
DA 9-42 Antenna Daily Maintenance Data Sheets
DA 9-43 Antenna Preventive Maintenance Data Sheets
DA 9-45 Computer Daily Maintenance Data Sheets
DA 9-46 Computer Preventive Maintenance Data Sheets
DA 9-48 Radio Set Daily Maintenance Data Sheets
DA 9-49 Radio Set Preventive Maintenance Data Sheets
DA 9-55 Nike-Hercules Antiaircraft Guided Missile System—Air and Oil Servicing of Accessory Power Supply—Checksheet
DA 9-58 Fuel Servicing and Operational Test (Hot Run) of Accessory Power Supply—Checksheet

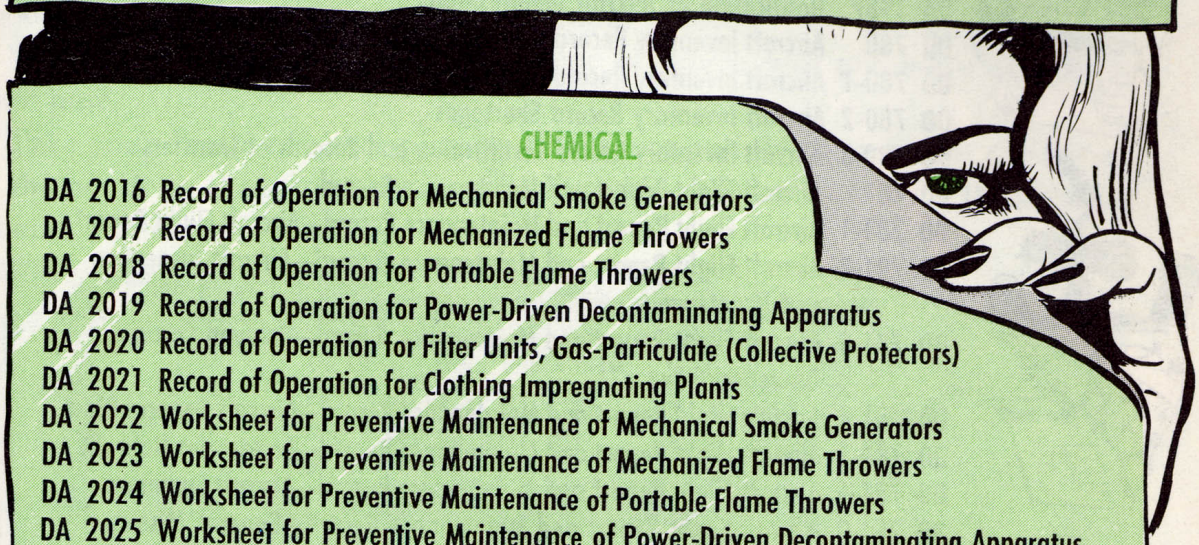
Check out the latest DA Pam 310-2, "Index of Blank Forms," you'll find a complete list of missile oranization forms, which run through, almost consecutively, to DA 9-130.

ENGINEERS

DA 464 Work Sheet for Preventive Maintenance and Technical Inspection of Engineer Equipment
DA 2320 Engineer Equipment Operational Record
DA 2321 Worksheet for Preventive Maintenance and Technical Inspection of Special Purpose Hydraulic Elevators and Doors
DA 5-21 Preventive Maintenance and Technical Inspection of Gas Generating Equipment
DA 5-31 Shop Job Order Register
DA 5-73 Record of Engineer Equipment Requiring Repair Parts Support
DA 5-73a Change to Record of Engineer Equipment Requiring Repair Parts Support
DA 5-77 Equipment Data Worksheet for Engineer Supplies and Equipment

QUARTERMASTER

DA 465 Worksheet for Materials-Handling Equipment—Preventive Maintenance Service and Technical Inspection
DA 10-42 Army Parachute Log Record
DA 10-46 Registration and Historical Service Record of Materials-Handling Equipment (Powered) and Special Purpose Vehicles
DA 10-103 Worksheet for Special Purpose Vehicles and Equipment Preventive Maintenance Services and Inspections



CHEMICAL

DA 2016 Record of Operation for Mechanical Smoke Generators
DA 2017 Record of Operation for Mechanized Flame Throwers
DA 2018 Record of Operation for Portable Flame Throwers
DA 2019 Record of Operation for Power-Driven Decontaminating Apparatus
DA 2020 Record of Operation for Filter Units, Gas-Particulate (Collective Protectors)
DA 2021 Record of Operation for Clothing Impregnating Plants
DA 2022 Worksheet for Preventive Maintenance of Mechanical Smoke Generators
DA 2023 Worksheet for Preventive Maintenance of Mechanized Flame Throwers
DA 2024 Worksheet for Preventive Maintenance of Portable Flame Throwers
DA 2025 Worksheet for Preventive Maintenance of Power-Driven Decontaminating Apparatus
DA 2026 Worksheet for Preventive Maintenance of Filter Units, Gas-Particulate (Collective Protectors)
DA 2027 Worksheet for Preventive Maintenance of Clothing Impregnating Plants

SIGNAL

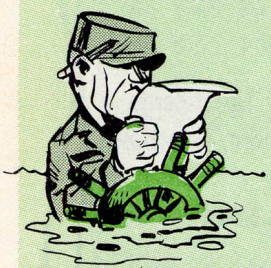
DA 11-181 Maintenance Check List for Signal Equipment Communication Security Equipments
DA 11-238 Maintenance Check List for Signal Equipment (Sound Equipment, Radio, Direction Finding Radar, Carrier, Radiosonde & Television)
DA 11-240 Maintenance Check List for Signal Equipment (Telephone Set, Handset, Headset, and Chestset)
DA 11-242 Maintenance Check List for Signal Equipment (Manual Telephone and Telegraph Central Offices)
DA 11-246 Maintenance Check List for Signal Equipment (Telephone Switchboard-Field)
DA 11-252 Maintenance Check List for Signal Equipment (Teletypewriter)
DA 11-254 Maintenance Check List for Signal Equipment (Still and Motion Picture Camera)
DA 11-256 Maintenance Check List for Signal Equipment (Photographic Developer, Projector, Dryer, Contact & Projection Printer)
DA 11-260 Maintenance Check List for Signal Equipment (Motor Generator Set and Rotary Converter)
DA 11-266 Maintenance Check List for Signal Equipment (Test Equipment)
DA 11-267 Maintenance Check List for Signal Equipment (Engine-Generator Sets and Reel Units, Engine-Driven)
DD 787-1 Electronic Failure Report—Signal Equipment

TRANSPORTATION VEHICLES

DA 2206 Repair Data Record of Commercial Design Vehicles
DA 2218 Parts Slip and Work Required

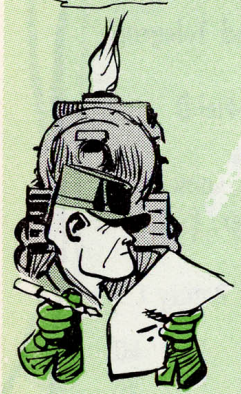
AIR

DA 1352 Army Aircraft Inventory, Status and Flying Time
DA 1890 Installed and Spare Aircraft Engines
DA 1987 Notification of Aircraft Modification
DD 780 Aircraft Inventory Record (for each current series)
DD 780-1 Aircraft Inventory Record Equipment List
DD 780-2 Aircraft Inventory Record Shortages
DD 780-3 Aircraft Inventory Record Certification and Records of Transfers
DD 781 Aircraft Flight Report and Maintenance Record
DD 781-1 Aircraft Flight Report and Maintenance Record—Aircraft Flight Report
DD 781-2 Aircraft Flight Report and Maintenance Record—Aircraft Inspection and Maintenance
DD 781-3 Aircraft Flight Report and Maintenance Record—Delayed Correction Discrepancy List
DD 781-4 Aircraft Flight Report and Maintenance Record—Aircraft General Data
DD 781-5 Aircraft Flight Report and Maintenance Record—Accessories Data
DD 781-6 Aircraft Flight Report and Maintenance Record—Aircraft Summary
DD 781-7 Aircraft Flight Report and Maintenance Record—General Mission Classifications—Mission Symbols
DD 829 Historical Record for Aeronautical Equipment
DD 829-1 Historical Record—Technical Instruction Compliance Record
DD 829-2 Historical Record—Significant Historical Data
DD 1275 Unsatisfactory Report



MARINE CRAFT

DA 55-187 Marine Craft Daily Trip Log and PM Service Record
DA 55-188 Marine Craft PM Service Index
DA 55-188A Marine Craft Lubrication Record
DA 55-189 PM Service and Inspection Worksheet for Marine Craft
DA 55-190 Deck Dept Checklist for Marine Craft
DA 55-191 Weekly Battery Test Record for Marine Craft

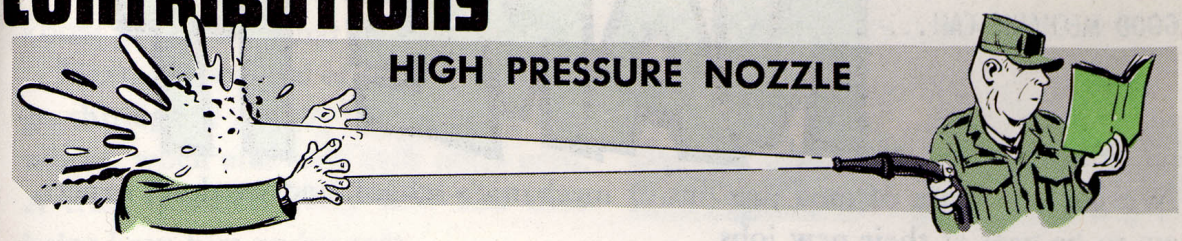


RAIL

DD 860 Daily Inspection Work Sheet for Motor Maintenance Cars
DD 861 Quarterly & Annual Inspection Work Sheet for Motor Maintenance Cars
DD 862 Daily Inspection Worksheet for Diesel Electric Locomotives
DD 863 Monthly & Semi-annual Inspection Worksheet for Diesel Electric Locomotives
DD 865 Daily Assignment Worksheet for Locomotives & Locomotive Cranes
DD 866 Daily Inspection Worksheet for Locomotive Cranes
DD 867 Monthly & Semi-annual Inspection Worksheet for Locomotive Cranes

Happy Maintenance!!

CONTRIBUTIONS

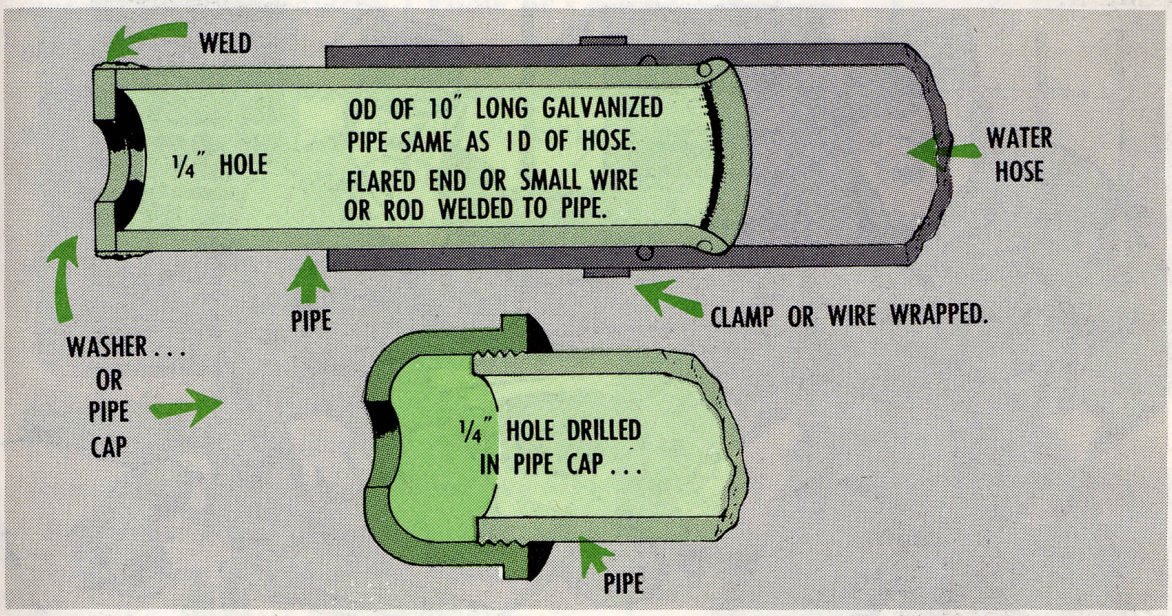


Dear Editor,

Lots'a times you don't get enough pressure from your washrack hose to do a good cleaning job on your tank's suspension.

We came up with two ideas, either one of which will put more muscles in your hose.

Take your choiçe of either picture. Either one will do the job. But the beauty of the nozzle in the second one is it's adjustable—one pressure with the pipe cap on and another with it off.



The Wash Rack Gang
Fort Hood, Texas

(Ed Note—Looks like your rig would be a big help in getting that clammy clay off your tanks. One thing you gotta remember, though. High pressure water is like rubbing alcohol, "for external use only". Use it all you want on hull, wheels and tracks, but not inside the tank. Like TB Ord 548 (4 Jan 54) says, azimuth indicators, sighting and fire control instruments, ain't built to resist high pressure water. The pressure drives some water into the guts of the instruments and corrodes them. If this pressure hose is used right it ought to save you a lot of time and work . . . so, close the hatches and use your pressure hose on outside surfaces only. Best make sure, too, that the water pressure's low enough so the hose can take it. Don't use the high pressure nozzle on engine compartments, wheeled vehicles, or guided missile equipment.)

A GOOD MECHANIC CAN . . .

NAME IT

Dear Editor,

We get our share of men just out of mechanic's school, and we don't expect them to be pros at their new jobs.

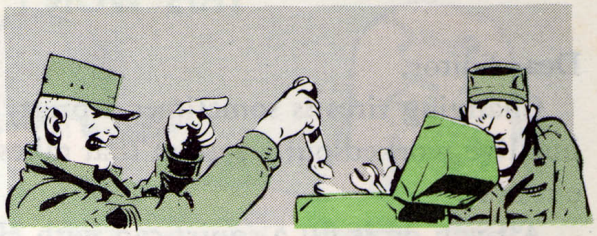
One of the hardest things to teach a man is to remember the differences between one housing and another, not to mention the parts that make up each housing. Any mechanic who doesn't know a part from a hole in the housing it came from is more of a hazard than a help.

So one of the best ways I've found to tip me off as to who's making out OK on his own and who's not was to scrape together a "shotgun" collection of stray parts and fling some "scatter shot" at each green mechanic when he's least expecting it.

I use the same deal for the older mechanics every now and then, too. I figure that a good mechanic ought to be able to not only name that part—he should be able to tell me where it goes and what it does when it gets there.

Same goes for every different kind of disconnect, lead and tubing I can get my hands on . . . not to mention common hardware items like nuts, bolts, spacers, shims, and clamps. If that man can't tell me where to use them, when to use them and how tight they should be—he needs one of my personal refresher courses. I don't want him fooling around with my equipment until I

know he knows what he's doing.



Next, I grab hold of his tool box and go through it tool by tool—asking him where, when and how each one's used. A trick question every now and then helps keep him on his toes.

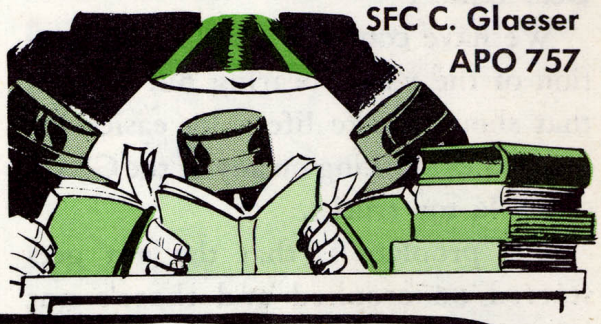
Then I hit him in another weak spot—knowledge of the manuals. Naturally, I don't expect him to remember things word for word . . . just in what section of what manual he can find the answer. There's nothing prettier, from a maintenance point of view, than a shopfull of dog-eared manuals covered with greasy fingerprints.

One of the best times to hit a man is about the time he's thinking about his promotion and efficiency tests—and hit him hard, for his own good. If he gets too many Maggie's Drawers, I know he's a man I can't rely on in tight spots until we **both** do something about it.

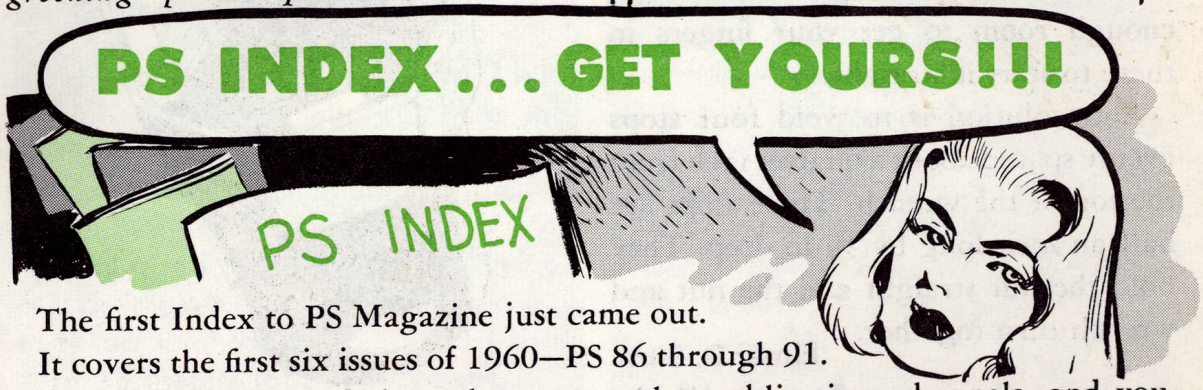
After all, a man who doesn't know how to use a torque wrench the right way, or doesn't know where to find the right settings, is no more to blame than I am for not getting it across to him.

I've been pulling these catch-him-when-he's-not-looking checks for quite some time and getting much better maintained equipment as a result. So I thought you might like to hear about my methods.

SFC C. Glaeser
APO 757



(Ed Note—There's an old shop law that says: "A green mechanic is more likely to use the wrong part or the wrong tool than an experienced one." Looks like your system might speed up the "de-greening" process quite a bit.)



The first Index to PS Magazine just came out.

It covers the first six issues of 1960—PS 86 through 91.

It's being distributed through your regular publications channels, and you should get one copy of the Index for each three copies of PS your unit gets.

A new Index will be coming out every six months. Each one will index the latest six issues of PS Magazine.

THIS WON'T TIRE YOU

Dear Editor,

Changing tires is sometimes a pretty rough deal, but I've worked out a system that takes some sweat out of it.

All you do is fill a squirt can with HB hydraulic fluid and squirt it where it does the most good—between the tire and rim all the way around both sides.

After you give the tire this treatment you can slip it on or off in half the time with half the work and no damage to the tire.

HB is one of the few lubricants safe to use with rubber. It's so safe that it's in contact with rubber in brake systems.

SFC Melvin J. Basanaz
Nevada Army National Guard

(Ed Note—Sure, it helps, Sarge. But why use hard-to-get and expensive HB when soap solution or bar soap is easy to get and works about as well. You'll find the dope on the soap in para 43 of TM 9-1870-1.)

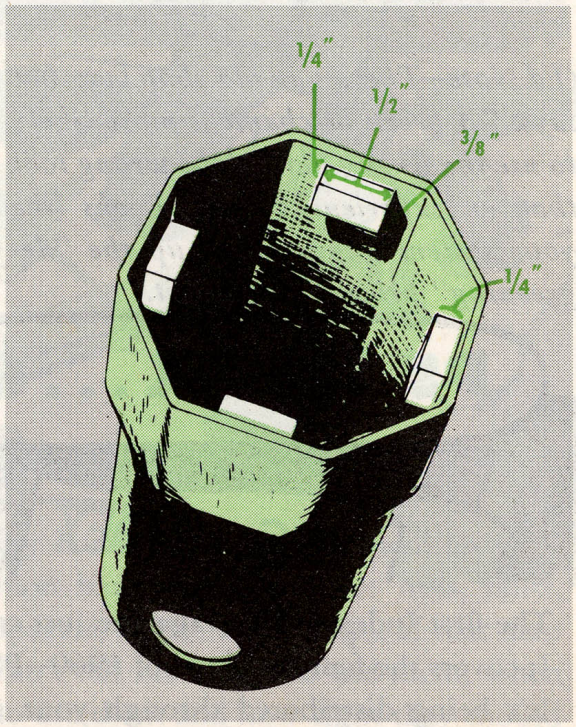
THREAD SAVER

Dear Editor,

We have come up with a modification of the wheel bearing nut wrench that should make life a lot easier for mechanics working on any of the G741-series ¾-ton trucks.

The problem is that the nut gets started on crooked and there's not enough room to get your fingers in there to start it straight.

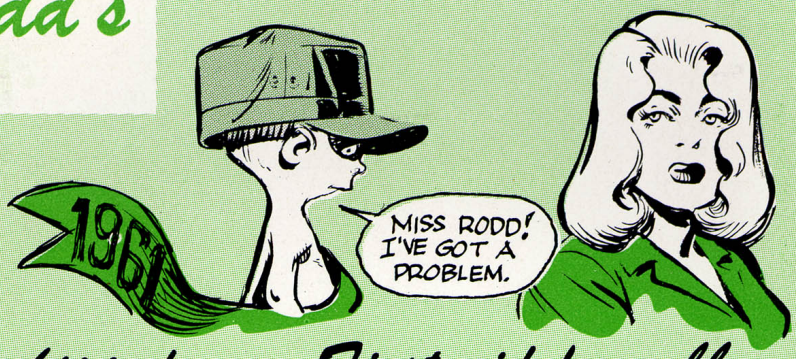
Our solution is to weld four stops evenly spaced about a quarter inch from the top of the wrench. These stops are half an inch long by ⅜-in deep. They hold the nut straight and the nut and wrench turn together.



Elmer D. Stirn
Tacoma, Wash.

(Ed Note—Looks like you have a good idea there. However, if you put in the stops by silver soldering instead of welding, they'd be easier to get out if some inspector took a dim view of your improvement.)

Connie Rodd's BRIEFS



Handspike skipped

Don't look now, but the handspike, an organizational tool that's needed on your 155mm howitzer M1A1 and M1A2 carriage was left outta ORD 7, SNL C-39. There's an allowance of two handspikes per major item or combination. An expendable item, it's Handspike, FSN 4933-617-0995.

No brush off

You .50 cal. machine gunners who've been askin' about heavy barrel type chamber brushes . . . you're in business. They're sittin' on depot shelves just waiting to be asked for by the number: FSN 1005-508-2589. The nomenclature is Brush, Chamber Cleaning. They were left out of your supply manual by mistake.

Grenade fuze news

Did you get change 1 to FM 23-30 (21 July 1960)? It tells you that the M205-series fuze used with the M2, M21 and M30 practice nand grenades can send the primer holder of the fuze assembly and striker assembly flying. And, as it takes off, the primer holder'll break up into fragments that'll travel up to 18 meters (about 20 yards). The change to the FM has some other scoop worth reading.

First aid for rubber

Here's good news—a repair kit for coldweather boots and pneumatic mattresses so tiny you can carry it in your boot or bag. Works like a tire patch and is good for small punctures and tears. FSN 8335-543-7420 gets you one from the QMC.

As you were

The DA Form 2028 (Recommended Changes to DA Technical Manual Parts List or Supply Manuals 7, 8 or 9) is **now** used for reporting an unsatisfactory pub on atomic weapons materiel. (You'll find this in Change 4 dated 1 Aug 60 to your TM 39-5-8.)

Winterized gas

For happy motoring in freezing temperatures, drain your fuel tank or fuel sump pump, add a quart of denatured alcohol to a 30-50 gallon fuel tank as you refill. Then add ½ pint to every 10 gallons of gas when you get gas later. And every time you drain water-alcohol from the tank or sump start over again with one quart.

Use Denatured Alcohol, Fed. O-E-760b, Grade III; FSN 6810-543-7415 for 1-gal; FSN 6810-201-0907 for 5-gal, and get it from Chemical. For more details on cold weather motoring read up on TM 9-207 (Sept 59).

Would You Stake Your Life on the Condition of Your Equipment?

THERE'LL BE A SHORT DELAY...

While everybody concerned with
Army Equipment takes a precious
moment to resolve that this year all needed
Organizational Maintenance is done right and on time.